# NARROW GAUGE AND SHORT LINE GAZETTE

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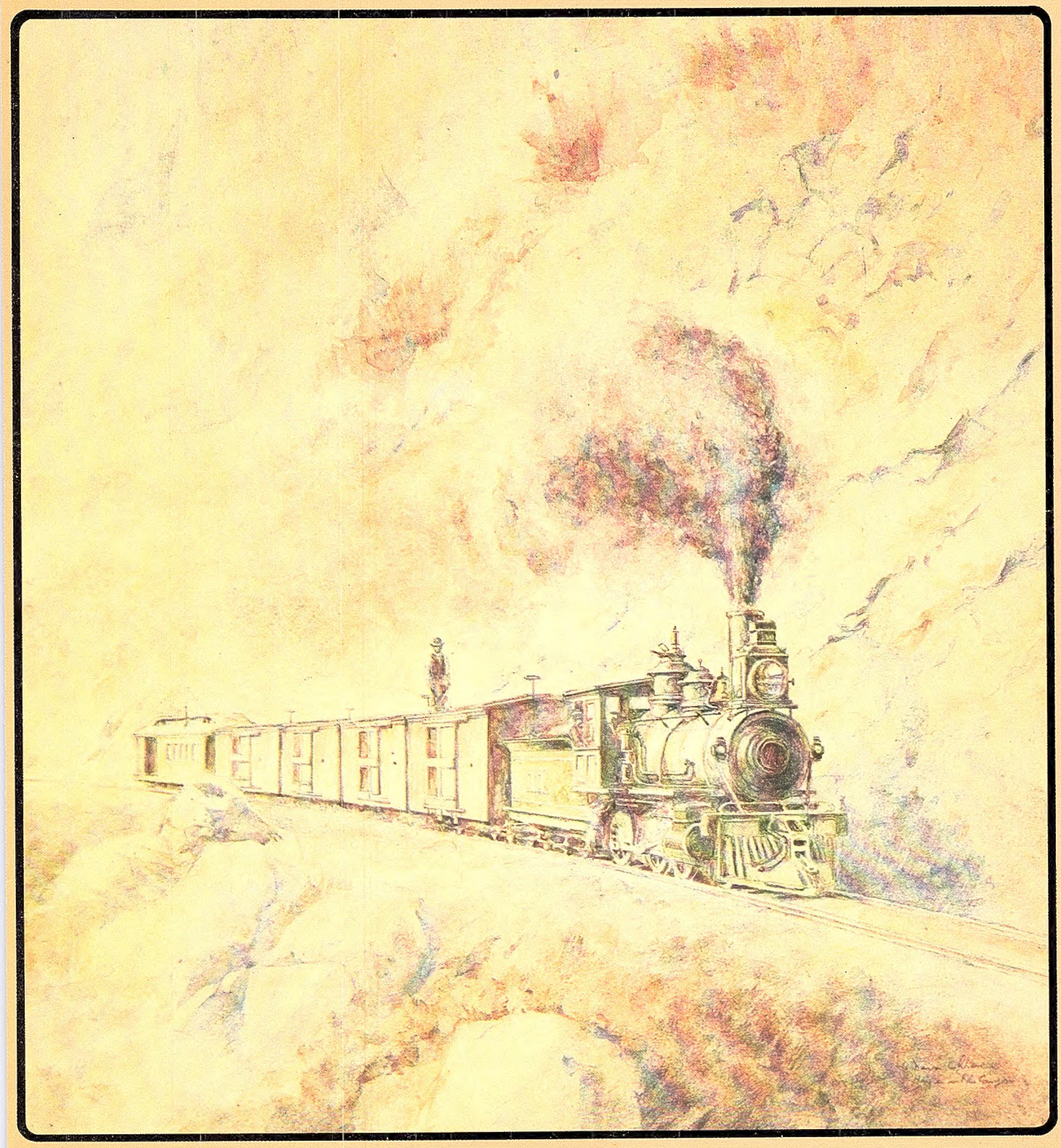

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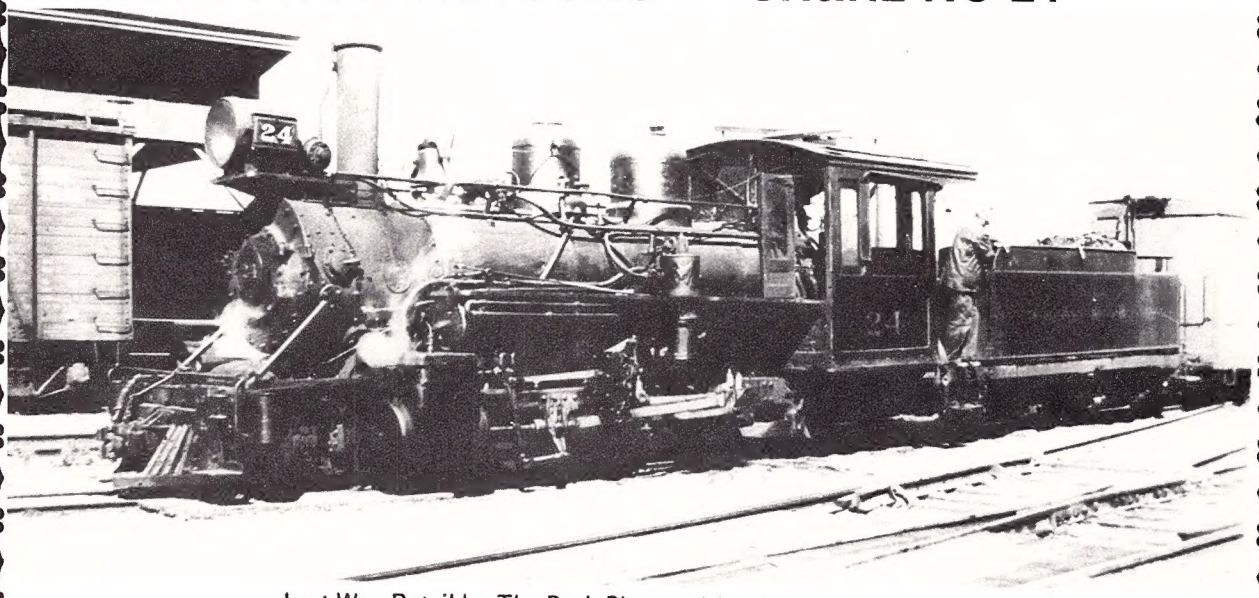
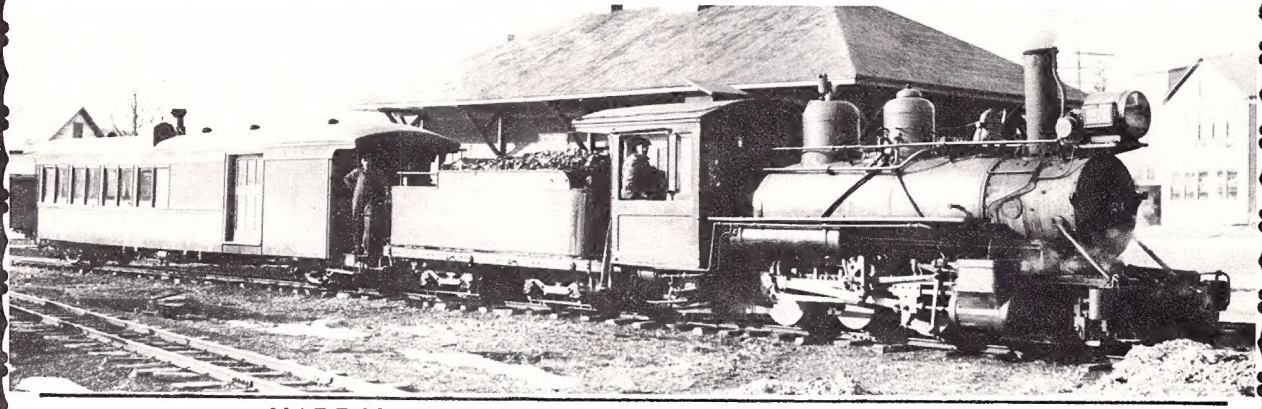


Lost Wax Detail by The Back Shop and Portland Products, including full cab interior.



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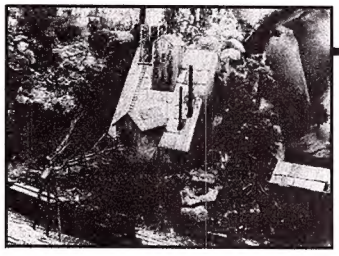
MARCH/APRIL 1981 VOLUME 7, NUMBER 1



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## COVER

Dana Wroe Bassett sent in this subtle painting of South Pacific Coast #11. The Baldwin 2-6-0 is shown as she looked in 1902 after being fitted for coal firing. I am delighted to see the SPC as a subject for our cover since this is one of my favorite railroads. *Ed.*

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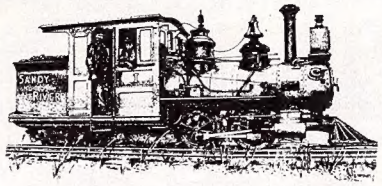


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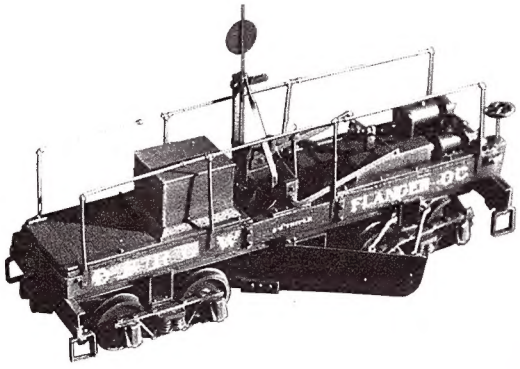

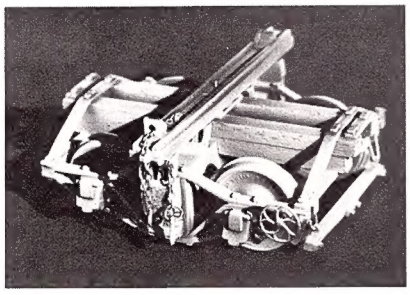

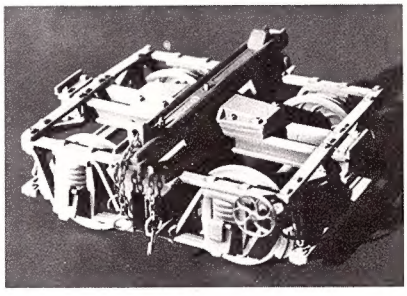

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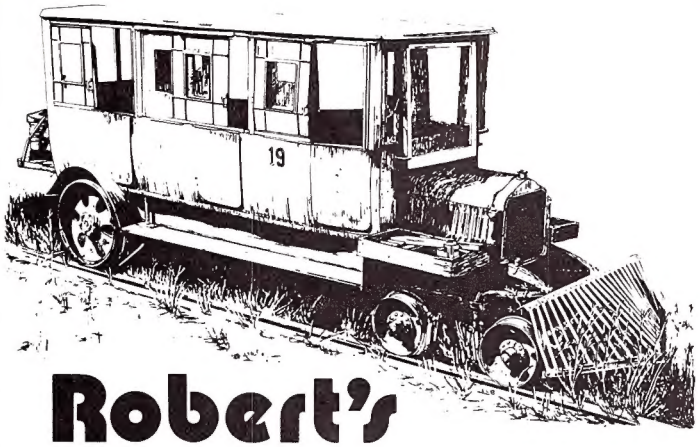
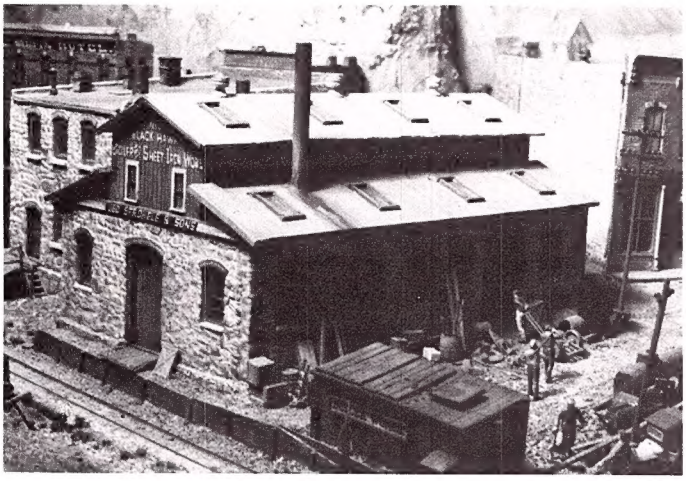
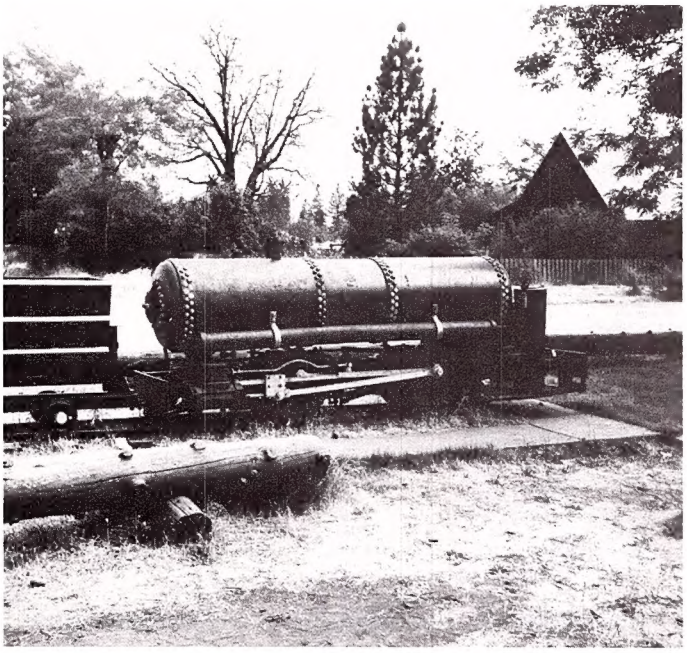


# Robert's Ramblings....

Harry Brunk's Boilerworks which was featured in the Jan/Feb 1981 **GAZETTE.** Note the effective use of clutter. *Photo by Harry Brunk.*





This issue starts the seventh year of the **GAZETTE**. We are very proud of our magazine and are most pleased with the continued support of our readers, advertisers and contributors. We hope all of you will continue to support us through a price increase. We also hope you will tell a friend about the **GAZETTE**, and tell your local hobby shop about us if you're a lone subscriber in a **GAZETTE** "desert". We want to continue to grow in readership *and* to become bigger and better. The price increase is designed to cover the effect of inflation and to allow us to bring you a bigger and better magazine.

Over the last three years inflation has cut into our ability to improve the **GAZETTE** and develop the finest model railroad magazine in the hobby. Our price increase has to cover increases in printing, paper, envelopes, rent, labor, and postage. The cost of mailing a **GAZETTE** second class has doubled since January 1978. Our office rent went up 37 percent this year and production and mailing costs can be expected to climb. So much for inflation.

The price increase will give us the option of adding more pages and of having more interior color. It is very frustrating to me as editor to have only one interior color page each issue. I have been unable to show the full beauty of several modeler's work because of this limitation on color. I also have many fine articles waiting to be published because of lack of space in the magazine. Some of you anxious authors will get your work in sooner with a larger magazine.

For a cover price of $2.75 we plan to provide you with a 100 page magazine with two pages of interior color every other month. We don't anticipate an increase in the number of ad pages so this should be a clear additional eight pages of editorial material for your enjoyment.

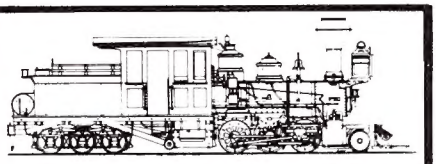
Actually we *have* been growing all along. This magazine is 20 pages larger than the January 1978 issue when we last increased our price.

An annual subscription will now sell for $15.00 ($1.50 below what you would pay in the shops). We will raise first class subscriptions to $30.00 with the hope that outrageous postal rate increases will not occur in first class mail rates. First class requires special handling and special envelopes and is in fact mailed by us personally instead of our mailing service. We will no longer be able to risk accepting foreign air mail subscriptions. We see no end in sight to the fuel increases which triggered the exorbitant increase in foreign air postage on January 1. It now costs over $4.00 to mail a **GAZETTE** to Japan or Australia. We will of course honor all present subscriptions including foreign air. We cannot accept any more foreign air subscriptions; foreign air renewals will be prorated to the new $20.00 surface rate.

Again, we hope you will continue your support of the **GAZETTE**. We are pledged to improving the magazine and bringing you the best in narrow gauge, short line, and vintage model and prototype railroading. With your help we will do it.

*Bob Brown*

Ted Wurm sent in this photo of the compressed air locomotive shown on page 54 of the January 1981 **GAZETTE**. According to the late Morgan North of Howell-North Books, this locomotive was 20 inch gauge and came from the Hidden Splendor Mine. The engine is now on display at Forest Hill, California which is near Auburn. *Photo by Ted Wurm.*



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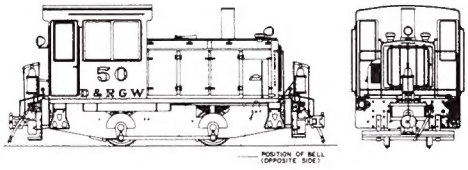


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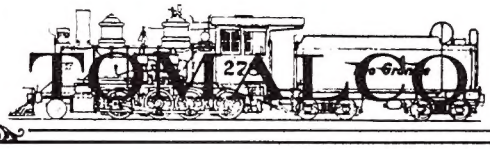


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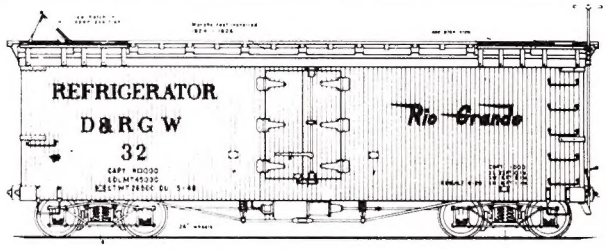


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# The Pigeon Hole

Dear Bob:

I received my May/June **GAZETTE** on May 31st. I have been really enjoying the articles on Clear Creek. It is really neat when one can pick one area and really do a job of modeling it. I have also enjoyed the Rio Grande Southern articles as this has been my favorite narrow gauge for many years.

At present I am working on the Rollins Pass line of the Denver & Salt Lake. I call it a short line.

I would like to have seen more on the "dog hole" steamer. What kind of engines did she have? How about boilers? Give us the whole works. *(Anyone have this info? Ed.)* I have always wanted to model this type of ship.

I found your article on stub switches quite interesting. When using code .070 rail in On3 I spiked the rails to gauge overhanging a block of wood. I then slipped rail joiners over the rail ends. My PC board throwbar was soldered to the bottom of the rail joiners. Then slide the throw bar rail joiner assembly off the rails and cut off the extra rail joiner with a Dremel tool cut off disc. My PC board is about 1/16 inch wide. This allows the rails to flex and the solder joints do not break.

Narrowly yours,
Ralph Hougesen

Dear Sir:

First of all, let me commend you on a great publication, your Narrow Gauge and Shortline Gazette, as being the best on the market. I am extremely pleased with all the aspects of this fine magazine, and by now you have received my subscription renewal.

I have just my Nov. '80 issue, and have been reading the Extra Narrow Gauge Junction by Dick Andrews, on page 64. The article contains 4 photos from the Crown-Zellerbach operation located in Camas, WA. The author asks if any reader can identify the processes at the plant, and being in the papermaking business, I recognized it immediately.

Crown's operation at this location is the manufacturing of pulp and paper. The flat car in the photo is loaded with bales of bleached wood kraft, or pulp as it is commonly referred to, processed into sheet form. They weigh approximately 450 to 500 lbs. each, and is used as the base ingredient in the manufacture of paper. As for the side dump cars, at first I thought they may be loaded with powdered white clay, a filler used in manufacturing paper also. Upon further research, however, I found that Crown also uses lime kilns and lime mud washers at this location, leading me to believe the cars are carrying lime. I have no idea as to the purpose of the gondolas.

I hope this could be of some help to Dick and his readers.

Thank you,
Robert E. Bernier

Dear Bob,

I appreciated the coverage you gave to Sn3 in the September/October 1980 issue. I'm just getting started in Sn3. Your list of suppliers left out a great source of kits. I'm referring to Mini-Structures, 549 Del Norte Ave., Corning, CA 96021. Hansel Main of Mini-Structures has an extensive list of kits which he makes to order. The usual material is cardstock although wood is available at extra cost.

Sn3 is booming! I have plans to build a sectional layout along one wall. Unfortunately, I don't seem to have the time to really get it going. However, all the products available will make the job easier.

Keep up the good work with the **GAZETTE.**

Sincerely yours,
Douglas J. Cotts

Dear Bob:

This is going to sound strange coming from me, but how the devil did Mich. Cal. or Diamond & Caldor throw their stub switches?

Did they use a harp switch stand on three way stubs such as you printed on the cover of your September 1975 **GAZETTE**? Or was there some other way to do it? I'm not overly thrilled with that Kemtron harp switch stand but if it's right to use, then of course I will use it.

Do any of your readers have photos or information on this question?

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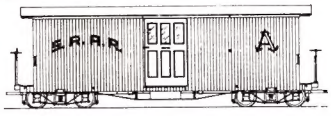

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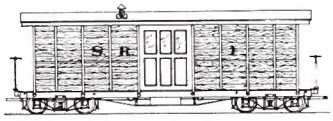

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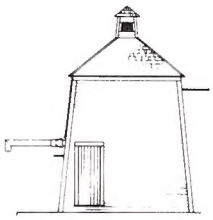

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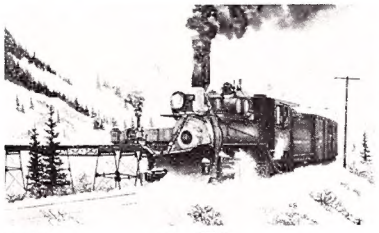

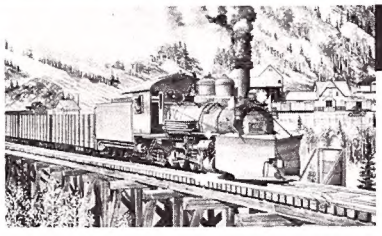

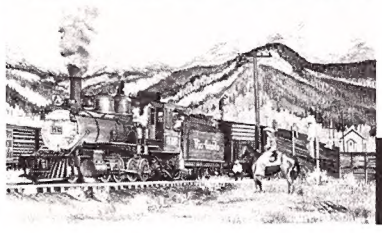

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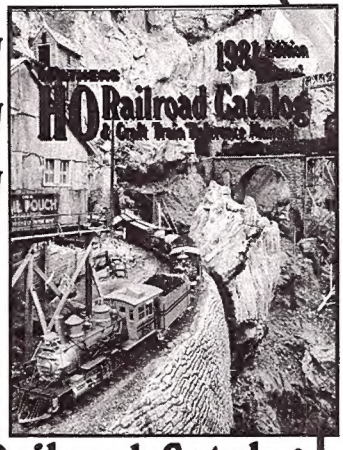


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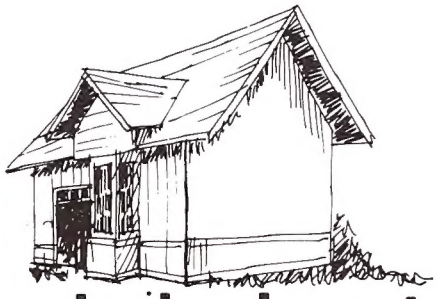

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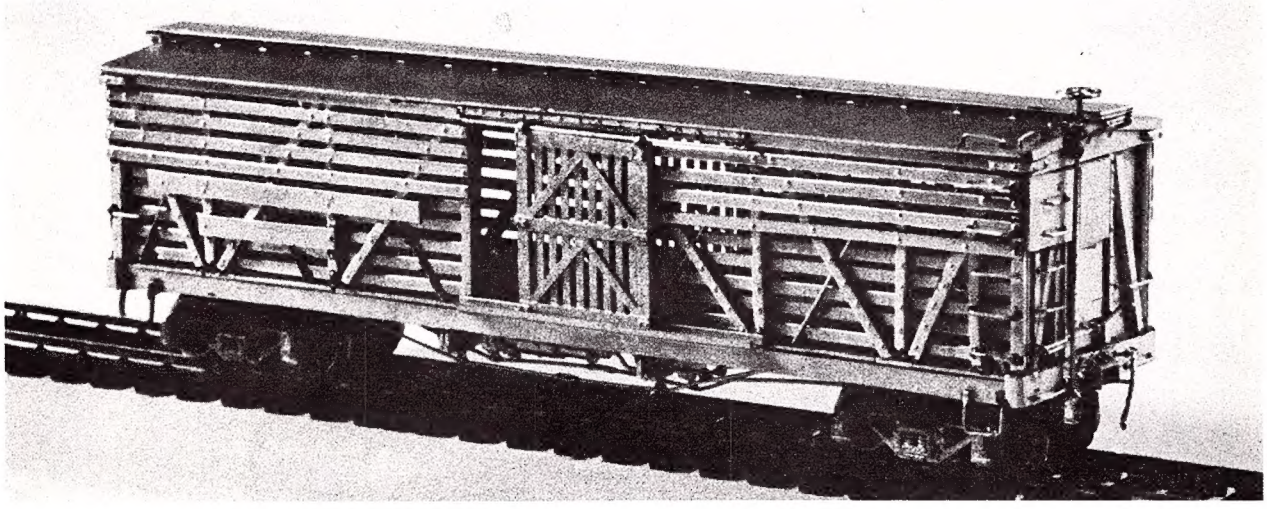

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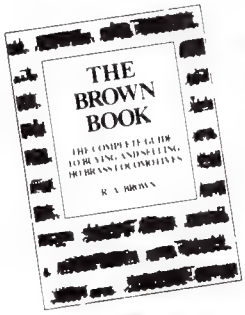


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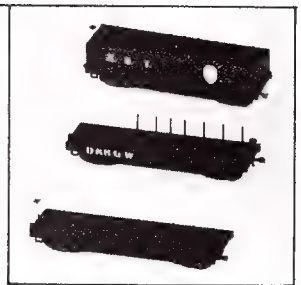

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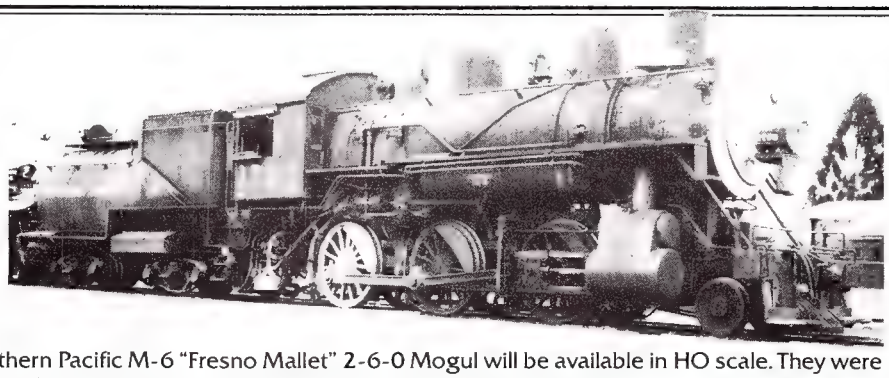

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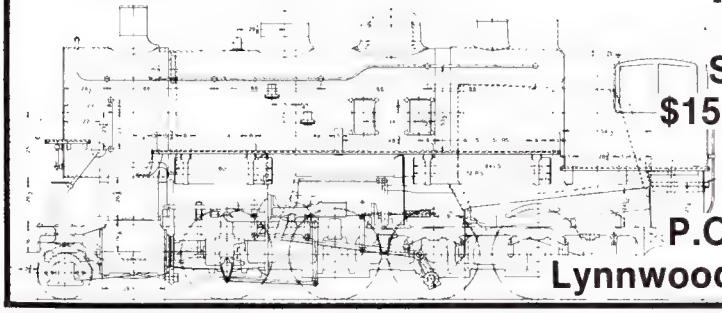

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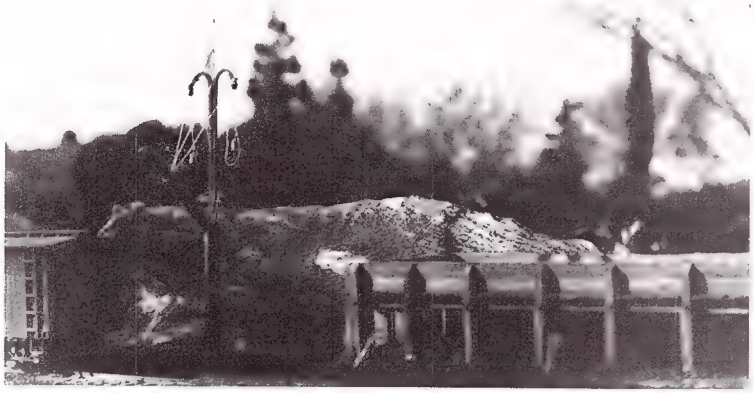

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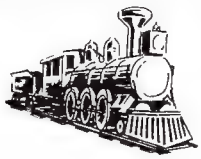

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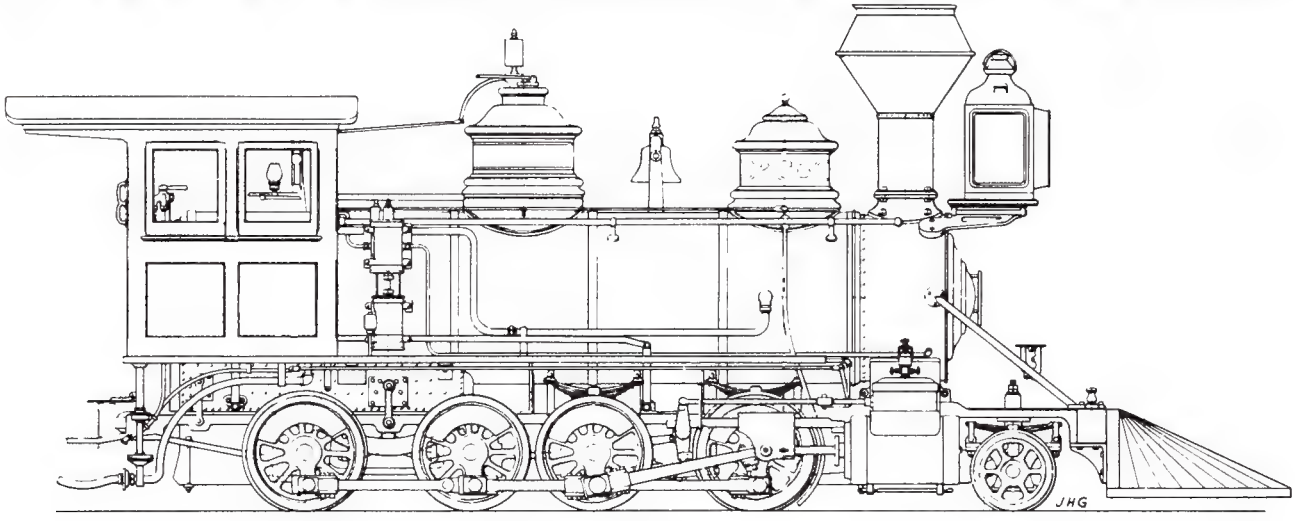


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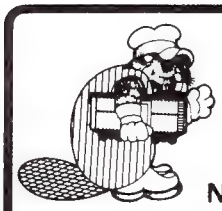

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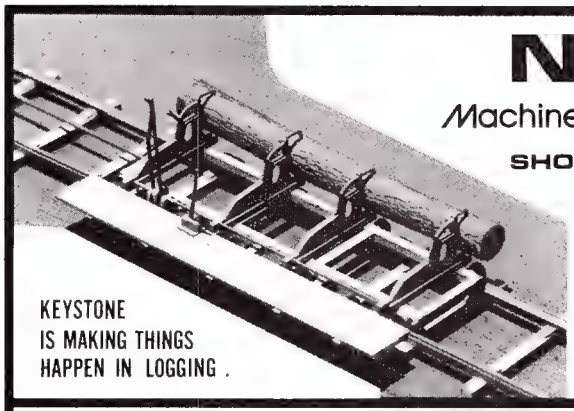

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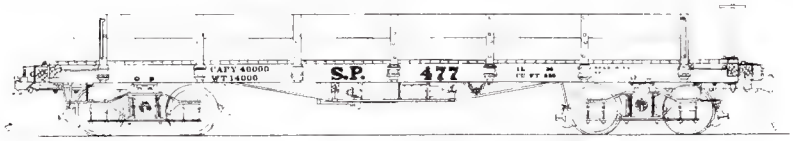


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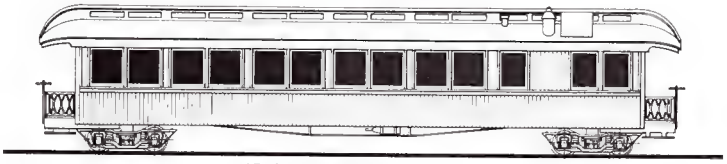

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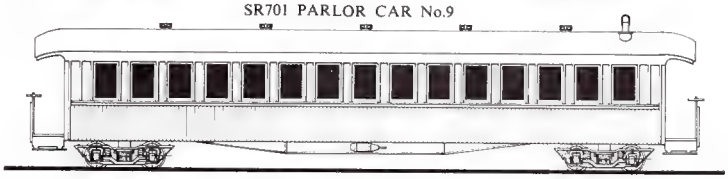

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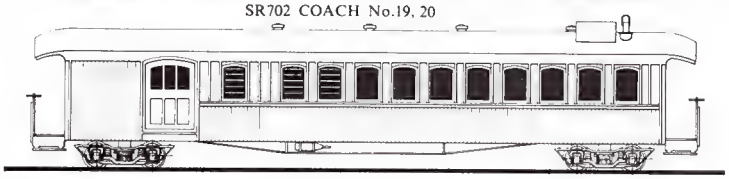

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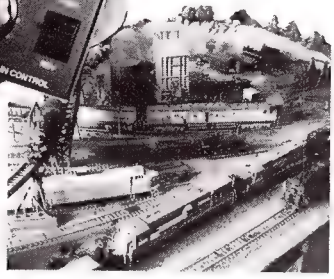

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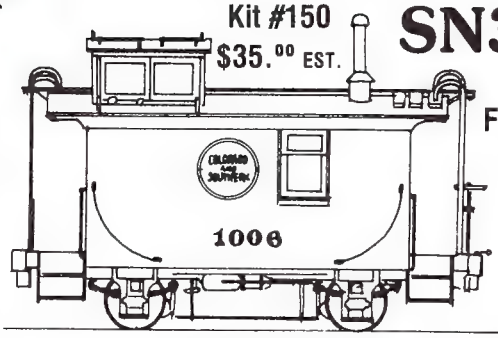


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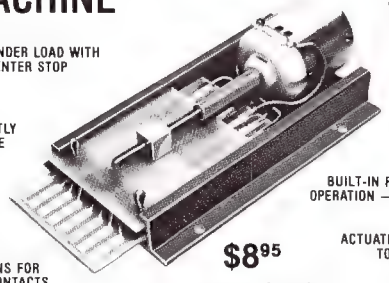

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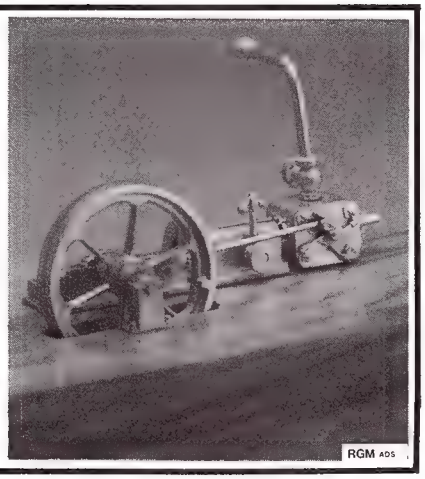




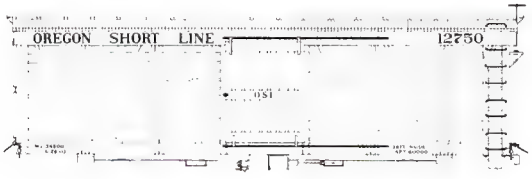


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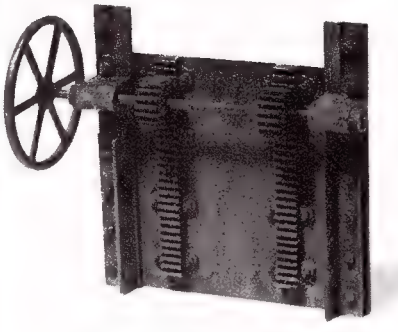

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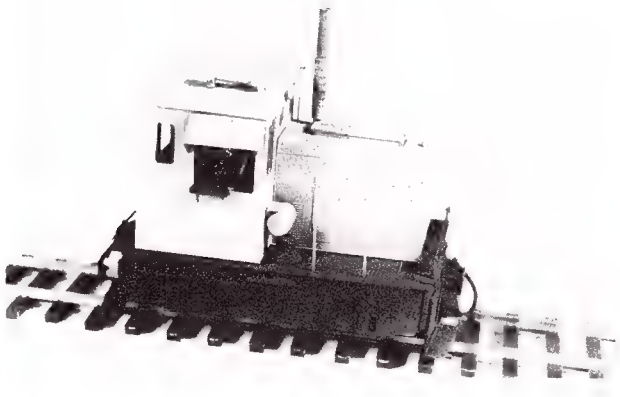
# NEW in REVIEW

## ON3 25-TON KEMTRON DIESEL
**by Bob Brown**

Kemtron Sales, P.O. Box 214236, Sacramento, CA 95821 is busy re-issuing the old Kemtron line and introducing new kits. The Original Whistle Stop Kit Company has combined forces with Precision Scale Company to produce the Kemtron Line. I am delighted at this because many very important parts and kits were manufactured by the pioneer Kemtron Corporation.

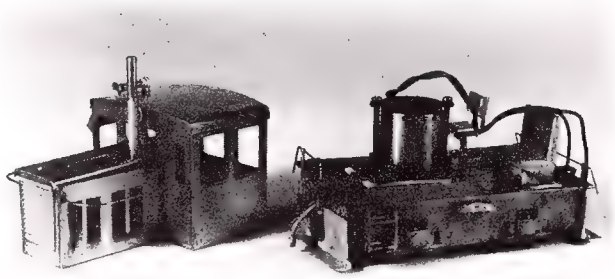
Their first new kit is the O scale 25-Ton diesel. I recently assembled one of these fine little locomotives. The kit makes into a small somewhat modern looking diesel. The price of this model is $198.00 and it is available now. The kit is composed of brass etchings, brass investment castings, and brass bar and sheet. The couplers are white metal and the drive is Delrin. The locomotive is available in either On3 or O standard gauge. I assembled my model, including painting, in about 12 hours. The model is not a simple snap together kit. You do need to know how to solder and clean up castings. You also must drill several holes and tap one hole 2-56. However, do not let this deter you from trying the kit. It would be a great beginning project for a modeler who wants to learn how to solder. I found it very satisfying to get back to an all metal soldered model.

The frame consists of two etched brass side frames which are perfectly etched out. You have to clean up the end beams, square the sides and ends, and solder them together. Be absolutely sure that the slots for the axle boxes are exactly opposite from each other. This is the most critical part of the whole kit. I used solder paste and a small torch to solder the frame. Once the frame is correct you solder on the main deck which is also etched to shape. It has a diamond tread etched on its top surface. I tack soldered the deck on at the front and sides. No problem using a torch and solder paste. The side frames have to have little cast spring plates soldered into the axle slots. The castings in my kit had one of these parts cut almost in half but the part still worked. The axle boxes have to be cut off the sprue and cleaned up with a small file. I found that my axle boxes fitted perfectly in the axle box slots in the frame.



Next you assemble the wheels onto the axle boxes, put on the springs, fit the assembly into the frame and solder on little strips of brass as keeper plates. I did all this with solder paste and a small soldering gun. The wheels come assembled with a Grandt Line Delrin drive all mounted for you. You have to place the Delrin chain on the sprocket wheels on each axle. The motor then mounts in a little Delrin casting and plugs into the ball socket in the drive. The motor is a micro-motor with a built in reducer. I had to raise my motor mount with two pieces of styrene to make it smooth. I also had to file just a little off of the axle ends for a perfect fit. The model is a fantastic running locomotive. It is smooth and quiet and is unbelievably responsive to the slightest touch of the throttle. I am very impressed by the drive in this kit.

The superstructure consists of a cab made up of four photo-engraved sides and ends. The roof has to be cut, fitted and bent to shape. The windows are all etched out and the roof contour has to be filed onto the ends. The hood is a one piece pre-formed etching. The radiator is a brass casting and fits like a glove. The locomotive comes with a detailed cab interior including seats, throttle, gauges, electrical panel and dummy panel lights.



The model just before painting. Notice the mounting of the motor and the interior seats.

The instructions consist of several pages of plans and some step by step instructions. I found the motor mounting description meager. I also had trouble understanding the superstructure mounting method and devised one of my own. The 2-56 tapped hole has to be run up into the bottom of the radiator. However, I found that on my locomotive the hood fitted so closely over the motor that I did not have to use the front mounting hole. I am very impressed by this model. It will provide a small, highly reliable, and smooth running model for any narrow gauge line. It does take some care to assemble and you do need to know how to solder or be willing to learn. I encountered no serious snags in assembling this kit even with the pressure of a deadline.

## ON3 CROSSING GATE PASSENGER CARS
**by Charlie Getz**

After years of unavailability, there are currently a number of D&RGW passenger car kits on the market in wood, urethane, and styrene. The newest series–and the first ever offered in styrene, is now available from the Crossing Gate, 6468 Moraga Avenue, Oakland CA 94611. Available are baggage, RPO, vestibule coach, and parlor. I tackled the last, figuring it would be the most complicated.

This was my first styrene car kit and while I highly recommend this kit for the styrene-experienced craftsman, I suggest that beginners beware. Overall, there was a lot of thought and work already put in the kit before it was packaged. Many of its parts come pre-sized and pre-cut. It is virtually all-styrene with Evergreen parts, and Grandt castings and trucks; only the wire and screws are not plastic. The parts are uniformly excellent in quality, and most fit correctly. They come bagged in sub-assemblies–an excellent idea.

I would have had an easier time if I had memorized the instructions instead of just reading them. A minor hitch in Step 3 may become a major problem in Step 9. On the parlor car, the need to remember which end is which is critical. I inadvertently "switched" the underbody so that

The underside of the passenger car roof. The cross bracing and open clerestory can be seen in this photograph.

the brake rigging isn't where it's supposed to be. Oh well. The construction is like that of most wooden kits–the frame is built, the floor added, and the sides completed. So far, so good. There is some fussy fitting, but the die-cut window openings help a lot.

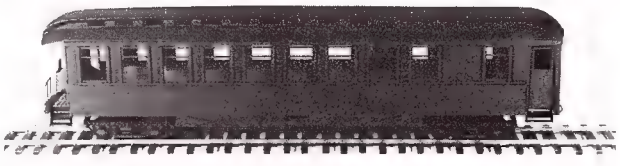
My first problem appeared while struggling with the vestibule end. The parts just didn't want to fit. I added strips of styrene to the end quarter-rounds to make everything square. The instructions call for a sequence which is slightly awkward. I suggest you triple test-fit the parts and fully understand where *everything* goes. The instructions are a bit vague (e.g. "Glue the vestibule door to the body ends" – ah, but *where?*). There are a lot of tiny gaps between the pieces that I'll go over with putty later, such as the sides in the window openings.

What separates the men from the boys is the roof. The upper and lower roof panels come partly pre-formed, and construction of the clerestory frame is, for the most part, not difficult. The length of the uncut clerestory stiffeners was not in the instructions. However, I guessed 41 feet–and was right. Also the lower frame sides are erroneously listed as a scale 6 feet 6½ inches. Nope–try 41 feet too. Surprisingly the little "filler" piece between the end of the clerestory and the roof end (you are to form this from a strip of styrene) was not as hard as I expected. The instructions advise you to use a trial-and-fit method–usually a sure sign of trouble, but by tracing the shape using the roof as a guide, the fillers went in easily. Shaping the roof was complicated by my kit having two of the same lower roof instead of a left and right. Since there wasn't time to send away for a replacement, I made the best of it.

Do not wait until the final assembly to paint–you won't be able to reach some areas, such as the vestibule easily. Paint the interior, underframe and vestibule as you go, remembering to scrape off paint for gluing. I used Floquil Coach Green. The Grandt trucks snapped together.

I'm pleased with the finished car despite a lot of errors due to my inexperience with styrene. Construction is faster than with wood, but more unforgiving. Once something is *glued*, it is glued. Further, surface blemishes due to over-cementing are difficult to remove. Neatness and a slow pace are definitely required–it doesn't help to face a deadline.

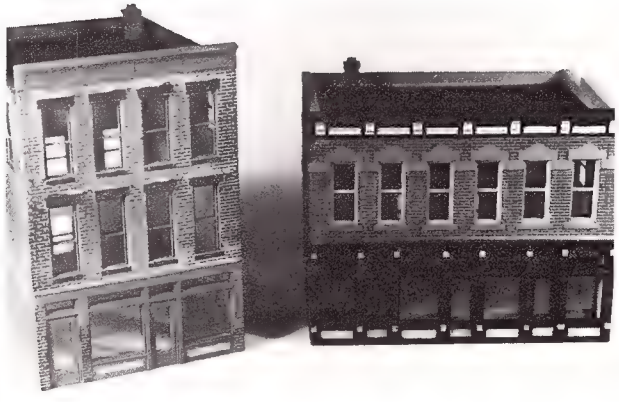
Now that this review is done, I hope to finish the car with the addition of roofing paper and vents, and completion of the underframe detail. I'll also add an interior and letter the car for the D&RGW. I recommend these kits for the experienced car builder who wants something a bit different.



The nearly complete car. Note the clean construction possible with styrene. The car still needs handrails, couplers, and lettering.

**The Structure Co.,** Box 6375, Washington Station, Reno NV 89513 now has available the Forks Creek Station in O scale. Harry Brunk's fine article and plans in the **GAZETTE** inspired this fine little station kit. I assembled my kit in about eight hours with little trouble. The kit is composed of precut Kappler scribed siding. I had to trim all of my windows because the window castings did not fit the holes. The battens on the walls had to be cut and installed one at a time giving a very realistic look to the sides of the structure. I brush painted my sides after applying the battens. I streaked on a mixture of Box Car Red and Grime. I merely dipped my brush first in the Grime and then in the Red and brushed the mix on. The windows and doors are plastic injection moldings. I cleaned mine up and sprayed them White. The doors are especially well detailed. They even have separate door knobs. The roof is cardboard and is covered with paper corrugated material. I substituted heavier cardboard for my roof. I painted the roof material with Grime and then gently streaked on some Rust. The chimney is a brownish urethane casting which just needs a little touch of Box Car Red. The roof and edge trim is made up of individual strips of wood. The platform is also made up of individual strips. I pre-stained my platform boards and then distressed each board with wood grain and knot holes. The kit has many details. A Grandt Line baggage wagon is included as are several white metal milk cans, trunks, suitcases and a really neat little baggage cart. Special decals are also provided for the station sign, a telegraph sign, both Railway and American Express signs, and a train order board. I had some trouble getting the decals to snug down on my kit. The train order board was about ¼ inch too long to fit on the wall and had to be cut off. I am very pleased with my station. It went together easily and is very attractive. The plans and instructions are complete and a full color photograph is provided to help you color your model. The kit sells for $67.95 in O scale and $44.95 in HO. My station will become a station and office for my new mining line. *Bob Brown.*

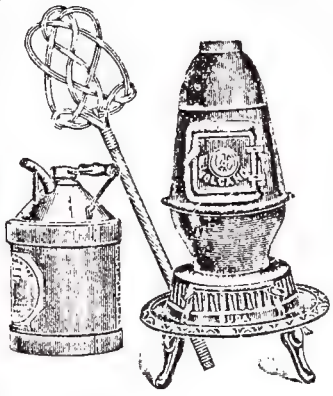
**Magnuson Models,** P.O. Box 199, Lake Villa, IL 60046, recently released a series of inexpensive styrene building kits in HO. As part of the Century Series, I examined two, #M-802, the Gemini Building (painted) and #M-803, Bill's Glass Shop (unpainted). Each is similar, with all door and window components crisply molded in place, acetate for windows, styrene sheet for roofing, and a cast metal chimney. These kits come in both painted and unpainted versions. In the painted version, a simple paint scheme is already applied including a wall sign. My version had gray brick walls with green trim. I elected to overpaint the walls with boxcar red, but light enough that the wall sign shows through. I am pleased with the effect. Assembly is as easy as gluing the walls together, though I recommend you erect interior walls (not provided) to act as light baffles. I intend to do this and eventually add some interior detail to the storefronts, signs, and other clutter. At $8.95 (unpainted) and $12.95 (painted), these kits are well-detailed bargains. *Charlie Getz.*

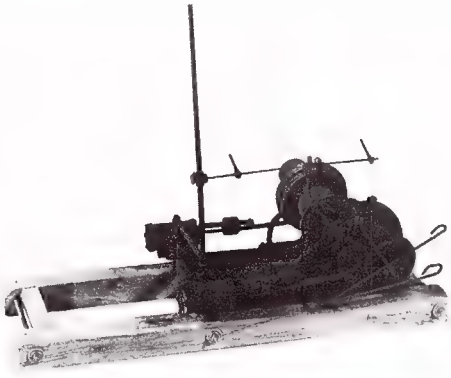


# Bits & Pieces

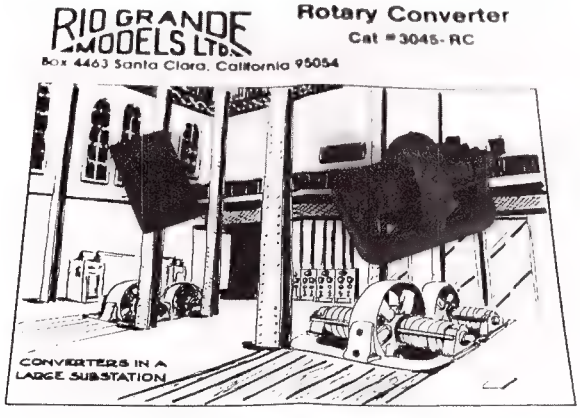
## What's New in Detail Parts

**by Bob Brown**



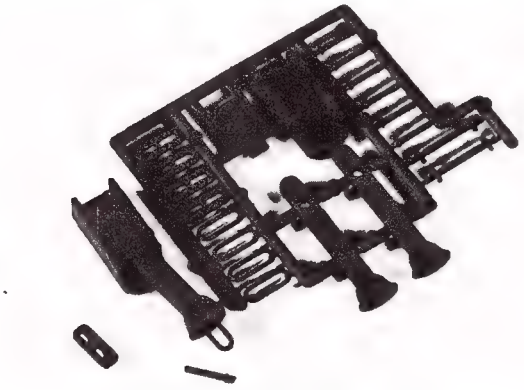


**Durango Press,** P.O. Box 1836, Lynwood, WA 98036 has a new O scale winch kit available. This a very detailed model and is composed of white metal castings and wood. The winch is made up of many very detailed little pieces and takes some time and care to assemble. However, the end result is well worth it. The skids are pre-cut wood. You have to drill for the tie bars and then add nut and bolt details to the skids. I was very pleased with my kit. It took about three evenings to complete. Incidentally this is the winch Durango used in their derrick car OP. The kit sells for $15.95.




**Rio Grande Models,** Box 463 Agnew Station, Santa Clara, CA 95054 has a new HO scale rotary converter kit available. This kit sells for $9.95 and consists of the converter and a switch board. A rotary converter is a piece of electrical equipment used for converting electrical current. Rotary converters were used mainly on traction lines and were located in stationary power stations or in portable substations, usually in railroad cars. The kit is cast in white metal and goes together in a few minutes.

**Simpson,** P.O. Box 256, Smith Flat, CA 95727 has two new items available. The first is a pair of O scale West Side link and pin couplers. These couplers are designed to go with the various Simpson WS kits but they will work on any car using link and pin couplers. The couplers consist of black injection moldings. Each coupler comes in a set which includes several pins and two kinds of links. You have to cut the parts off and assemble the two halves of each coupler. A draft gear box and cover plate is also included. The draft gear is notched to fit a WS underframe. The photo shows one assembled coupler as well as one non-assembled set of parts. These are fine couplers. They sell for $2.00 per pair. Simpson's second new item is ¼ inch scale corrugated paper material. I really like paper corrugated material because of the way it takes paint and glues down. The Simpson material comes in about 8-foot lengths and sells for $2.95.



**Don Winter,** 655 Newport Street, Denver, CO 80220 has issued a new O scale farm wagon. The wagon is really a skeleton on which you can add loads or other wagon bodies. The kit is composed of pre-cut pieces of walnut which is dark in color, very smooth, and has a pronounced grain. The rest of the kit is easily assembled white metal castings including the wheels. The instructions could be more clear but with a little study I got my wagon together. I left my wagon's wood natural and pre-painted all the metal detail Floquil Rust. I used Super T Hot Stuff to assemble the kit. My wagon provides a nice piece of detail for my Phillips scene.

# In Brief...

**Nevada-California Car Shops,** P.O. Box 661, Highland, CA 92346 has their new On3 SP Narrow gauge flat bottom gondola kit available. The kit sells for $20.95 less trucks and represents an early version of this car. The kit is composed of pre-cut Kappler wood, injection plastic detail castings and special decals. You can build #477, #484, or #250 from this kit. Ask for kit #NG-On3-1 ...

**Model Masterpieces,**P.O. Box 1634, Englewood, CO 80150 has their new O scale D&RGW/RGS 52 foot turntable kit available. The kit sells for $44.50 and is composed of pre-cut wood strips with plastic nut and bolts and white metal detail castings. The pit center is a two piece dental plaster casting. A complete center bearing system is provided. The turntable is of the "gallows" type. MM has also issued their new 40 stamp mill in HO scale. This mill features pre-cut wood walls, a stone foundation, and plastic windows and doors. The mill is a nice size, being neither too large or too small. The price is $39.95 ...

**Precision Scale Co.,** 1120 A Gum Ave., Woodland, CA 95695 has issued their new HOn3 version of RGS #20. The locomotive is sold out but may be available from your local hobby shop or from an advertiser in the **GAZETTE**. The model is a well detailed version of this popular locomotive. My sample ran very smoothly right out of the box. The locomotive sells for about $260.00 ...

**Brick Price Movie Miniatures,** 5115 Douglas Fir Dr., Suite F, Calabasas, CA 91302 is marketing a new plastic construction material. It is called "It". The material is a white sheet much like styrene. It can be cut cleanly leaving sharp edges and it bonds with Super T Hot Stuff. Five thicknesses are available from .78 inches thick to .237 inches thick. The sheets are 6×12 inches. The prices range from $1.45 to $3.95 per sheet. Write for information to Brick Price ...

**Rock Creek Models,** 408-11th Ave., Longmont, CO 80501 is selling a set of 35mm transparencies of the PBL Rider Freight which was operated last September 24-25th. The set consists of 20 slides in a small box and comes with a full description of the trip ...

**The Hobby Barn,** 365 Court St., Plymouth, MA 02360 has a beautiful set of photo-etched brass ¼ inch scale Baldwin number plates available. They come ready to snap off the brass sheet. A set includes numbers 1-24 plus blank plates and some with stars. Sets are available in 12 inch and 16 inch diameters. The sets sell for $9.00 each ...

**North West Shortline,** Box 423, Seattle, WA 98111 has issued their latest specification booklet on Sagami can, flat can, and open frame motors. This is a must purchase for anyone interested in can type motors for his locomotives...

**Kemtron Sales,** P.O. Box 214236, Sacramento, CA 95821 has re-issued the famous HO gauge "Thomas Flyer". This little rail car was designed by Cliff Grandt in the 1950's. It consists of all brass castings. The motor has to be assembled into the model. All the motor parts are provided in the kit. A nostalgic instruction sheet from the original kit is provided. The "Flyer" sells for $49.95 ...

**The Rock Quarry,** 3008 Emerald Drive, Mesquite, TX 75150 has a new line of real earth in many sizes and colors. They are offering 12 oz. packages of fine, medium, and coarse rocks and earth in 10 different colors. The bags sell for $1.25 each ...

**Don Winter,** 655 Newport St., Denver, CO 80220 continues to put out detail items. Write to them for listings. They bring out a new item about every two weeks so it is hard to keep up without a program. Their kits are usually white metal, strip wood and investment castings. New, on the way is a cement mixer, bulldozer, Rio Grande work cars, and maybe a Climax ...

**The Laughing Whale,** Wiscasset, Maine 04578 has several ¼ inch scale model boats available. Write to them for details and watch the **GAZETTE** for even more information ...

**The Denver Public Library,** Western History Department, Denver, CO 80220 has Vol. 2 of the Otto C. Perry photo collection available. This volume lists photos from the EBT through the Wyoming RR, and included the RGS, buses, trucks, and aircraft ...

**Pirate Models,** available from Walthers, 5601 W. Florist Ave., Milwaukee, WI 53218 has some new buses, including an American made Mack coach in white metal and photo etched brass. This 1920-30 era bus should give your passenger train some competition. It sells for $23.75 ..

**Campbell Scale Models,** P.O. Box 121, Tustin, CA 92680 is re-releasing the old "Timberline" kit series. Their next kit will be the Carriage Works followed by the Assay Office/Clothing Store. Nice to have these kits back ...

**Chooch Enterprises,** Box 5767, Tacoma, WA 98405 has an HO 1930's service station cast in urethane with metal castings coming soon. In O scale look for a mining office in urethane ...

**McLeod Rail Miniatures,** Box 5903, Orange, CA 92667 recently produced some superb lumber loads. About $20.00 worth of scale lumber was cut, neatly stacked, and cast for a highly realistic flat car load or scenic item. The plaster castings come undecorated at $5.95 or with a company logo for $6.95. There are three stacks in a set ...

**Detail Associates,** Box 197, Santa Maria, CA 93456 should release the HO Ponderosa Water Tank soon, #7004 at $15-$20. This is a branchline open top tank similar to those once used by the Sierra Railway. An N scale skeleton car is planned, as is a plastic diesel (HO?) ...

**Magnuson Models,** P.O. Box 199, Lake Villa, IL 60046 has a new HO Municipal building. It is typical of public buildings and makes into an impressive model. Magnus Wheel Works is a new O scale two story brick building with an annex at $39.95. Also new is a nifty HO art deco gas station at $37.95. Magnuson's new HO automobiles have been upgraded –now they are plastic. Coming in HO is a Transfer Service Building, a Two Story building and additional 1/24 scale figures ...

**Walthers** is offering a new line of gnarled trees in small (3 for $5.95), medium (2 for $5.95), or large (1 for $5.95). Pines with white metal trunks are also offered in various sizes and prices ...

**C.D.S. Lettering Ltd.,** Box 2003 Sta. D, Ottawa, Canada, K1P-5W3, has some new narrow gauge transfers available in HO, S, and O. A large variety of DSP&P, D&RGW, WP&Y, F&CC, and RGS are available. Each set letters one car, and is based on John Maxwell photos and data from the Colorado Railroad Museum. These sets retail at HO-$1.10, S-$1.50 and O-$1.90 ...

**Rio Grande Models Ltd.,** Box 463 Agnew Station, Santa Clara, CA 95054 has their new HO gauge side dump gon available. The kit makes into a 1920's car. The prototype can still be found today on the Sierra Railway. The kit is composed of white metal castings and strip wood. Ask for #3038-SD at $15.95 ...

**The Original Whistle Stop Kit Co.,** 2828 Marconi Ave., Sacramento, CA 95821 will soon issue a new HOn3 all plastic derelict C-16. The model will have a solid boiler and is designed to rust away in the weeds. It has a cab interior but no rods or tender. A motorized version is planned sometime in the future. The price will be about $20.00 ...

FIRST

# GAZETTE/MDC LOCO BASHING CONTEST

# East Broad Top Mike from an MDC 2-8-0

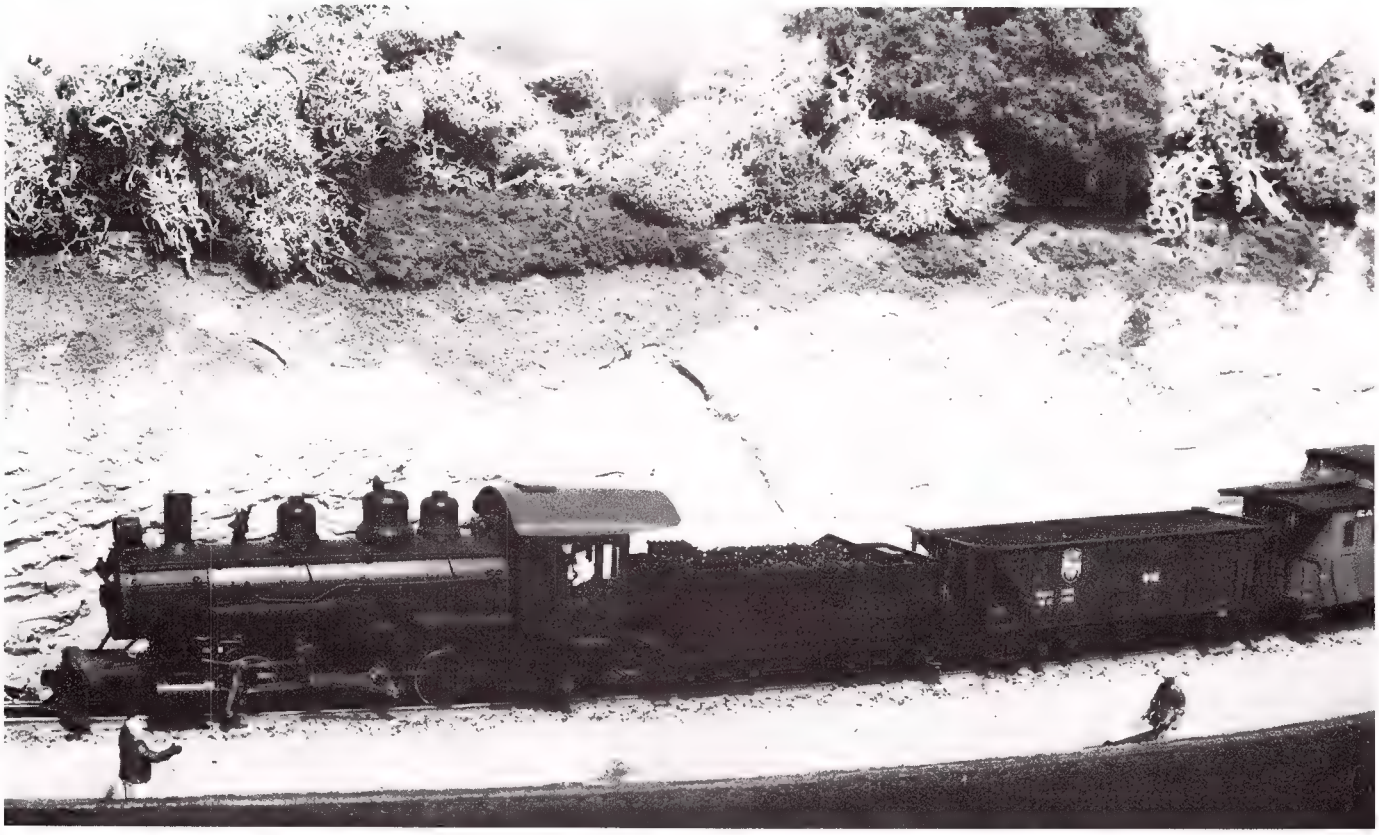
**by Deane Mellander**
**High Honors Winner**

This conversion is intended to create a "character sketch" of an East Broad Top RR light 2-8-2, using the MDC inside-frame 2-8-0 kit as a basis. I say "character sketch" because the mechanism has drivers that are too small and have incorrect spacing for the EBT. However, the overall proportions do come close to the EBT's light Mikes (Numbers 12, 14, 15).

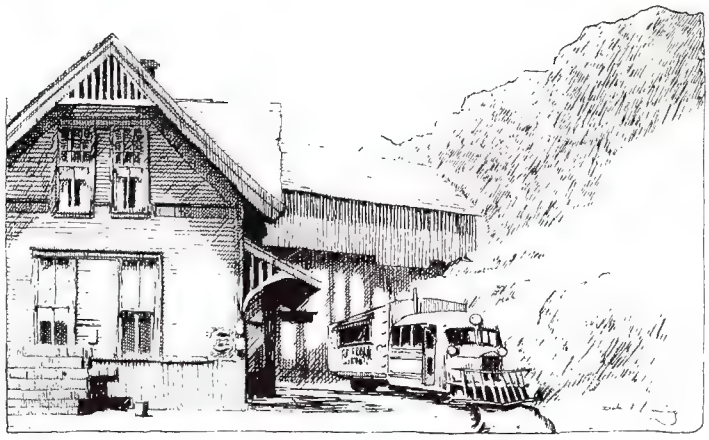
The conversion was done as follows:

1. Frame: Using a fine hacksaw a notch was cut into the back of the frame to clear the trailing truck wheel. A frame extension made of 1/16 inch square brass rod and .020 strip was epoxied into the slots behind the firebox sides.
2. Cylinders: New valve chests, made from brass strip, were epoxied to the cylinder block to increase their height as per EBT practice.
3. Valve Gear: A new bracket was formed from brass to replace the stock cylinder guide bracket. New valve gear and crosshead sets were made up from Mantua parts. New crosshead links and radius rods had to be made to get correct lengths for these parts.
4. Trailing Truck: This was made of brass strips and shapes, plus a pair of Kemtron journal boxes and cutdown loco driver springs. The wheels are Kemtron 26 inch, spoked, and mounted on extra-long axles.
5. Superstructure: A new cab was made up out of .015 and .020 styrene following EBT prototype plans. This was glued to the boiler, setting it back about three scale feet from the stock cab location. Cast-on running boards were trimmed to allow the cab to sit down properly. The left front running board was cut off the boiler and reattached higher up to allow placing an air tank underneath. The cast-on stack base and sand dome were removed. The following new parts were added: headlight and base, stack, bell, 2 sand domes, generator, injectors, whistle, misc. piping.
6. Tender: The coal bunker sides were trimmed down flush with the rear height. The rear coal bunker bulkhead was trimmed to a three-sided shape, and a pair of Kemtron tool boxes were epoxied in place.
7. Paint and Finish: Metal parts were primed with auto lacquer grey primer and painted Floquil Engine Black. Plastic parts were cleaned and sprayed with Scalecoat II Engine Black or Tuscan Red (cab roof). The lettering is from a Champ 3/32 inch red Railroad Roman alphabet set. Light weathering was applied. The window glass is plastic microscope cover slips. An MV headlight lens and MEW markers completed the work.

Since a 100 percent accurate EBT Mike cannot be built from the MDC kit I did not not go "soup to nuts" with all the detailing. Thus, the model was numbered 13, which fits into the EBT sequence where they had a blank (probably from superstition). I believe though that the model captures the lines and "feel" of the EBT's equipment without entailing a great deal of work beyond the capability of any narrow gauge modeler who has a little bit of experience.



# The Narrow Gauge SCENE



by Charlie Getz

## 3000 SERIES BOX CARS

Seven years already! Hard to believe, but we're starting that lucky number with this issue, Volume 7 #1. Over the past six years, the **GAZETTE** has really changed–for the better. To celebrate this birthday, I've just returned from a ride over the Rio Grande Southern from Ridgway to Rico and back. No, not a 1980 trek, but a 1947 fan trip as captured by the camera of Richard Kindig and his contemporaries. In short, I've been reviewing some slide sets obtained from Al Chione, Box 19644, Durango, Colorado 81301, and highly recommend them. You really can learn about the detail and *color* of Colorado's narrow gauge lines, and there are a lot of surprises too. Helper engines behind cabooses (supposedly a no-no), immaculately glossy passenger equipment, and a D&RGW railcar, obviously homemade, that no one knew existed. While Chione is out of these old sets, he is currently offering the Richard B. Jackson collection. Write for details–the Richard B. Jackson collection is well worth obtaining and will improve your Colorado modeling.

While looking at some slides of Durango Yard in the 1940's, I was amazed at how well the freight equipment was maintained. I'm used to the sad relics stagnating today in the Chama and Durango yards, and it was pleasant to see 3000 series boxcars freshly painted and lettered, bright in the sunshine. To be sure, there were some weathered cars, but a surprisingly large number appeared well-maintained. That got me thinking about the boxcars. One of the most common pieces of equipment on the Rio Grande, outnumbered only by gondolas or "coal cars", boxcars were so prevalent they were often "taken for granted" by railfans. While obscure structures and engines were duly recorded on film, the ubiquitous boxcar is all too often resigned to the fuzzy slightly-out-of-focus background.

Since even the snazziest K-36 looks positively naked without a string of house cars between it and that nicely painted brass caboose, a bit of quick research (real quick!) turned up some info to help you if you wish to model these cars.

First a little history. Robert Sloan I am not, so forgive the omissions, errors and outright ignorance. The earliest boxcars on the D&RG were the "1000" series (referring to the car numbers), which were little four-wheel wagons very similar to Continental or British practice, built in 1871. The only plans I could find are in the November 1968 issue of **FINELINES** (Vol. 5, #4). Robert Sloan's excellent book *Lettering Guide to Early Colorado Railroads* also has a diagram. No kits have been offered to my knowledge.

Shortly thereafter came the 2000 series – larger cars with regular four-wheel trucks under each end, built by Billimeyer and Small. They were 22 feet long, and 168 were constructed. Photos of both these and the 1000 series appear in past issues of the Colorado Railroad Museum *Annuals*, *Rio Grande Pictorial*, *Narrow Gauge in the Rockies*, and *Rio Grande–To The Pacific*. John W. Maxwell offers a ¼ inch plan for these cars, D-17, available from the Colorado Railroad Museum, P.O. Box 10, Golden, Colorado 80401. Plans for a "ventilated" boxcar (close to a 2000 series) appeared in the Spring 1973 **SLIM GAUGE NEWS**. The 1917 D&RG roster still listed four of these cars in existence. Sequoia Models offers a urethane kit in HOn3 of this diminutive car. Sloan has correct lettering in all scales for these early cars.

The 4000 series boxcars followed in 1882, and were similar to the "modern" 3000 series cars in size, being 27 feet 5 inches long, 7 feet 4 inches wide and 9 feet 5 inches high. The capacity was rated at 40,000 lbs. with a limit of 44,000. These cars were rebuilt in 1892, and survived in surprisingly large numbers into the mid-20th century. The 1923 roster lists 207 in existence, but by 1939 only 29 remained. No kits have been offered to my knowledge. Maxwell has a plan for these cars too, D-61.

It is the 3000 series boxcar, however, which is most commonly modeled, and can still be seen in some numbers. Some 750 of these cars were constructed in 1903-04. The cars are 29 feet 5 inches long, 7 feet 7 inches wide and 9 feet 5 inches high. They were rated at 50,000 lbs. capacity with a load limit of 55,000 lbs., and a light weight of 22,700. Some 724 remained as of 1923. By 1939, 713 were left; in 1953, 480; 1963, 298; and in 1968, 252 of these sturdy senior citizens were still serviceable.

Of course, the cars changed over the years in a number of ways. Originally of all wood construction, the cars were extensively upgraded in 1923-26 with better brakes, doors, and a new metal "Murphy" roof. Over the years, the cars were frequently changed as needed for loads or due to accidents. One nice detail often ignored by modelers, is the removal of the *end* tie rod which passed through holes in the end corner braces. These were removed during the 1920's re-build, but many of the cars retained the casting. O scale modelers and nit-pickers in S and HO please take note. Another piece of trivia–the "star" often stenciled on the end beam gave information on the last painting date for the car. Some on the C&TS are stenciled 7-45.

When freshly painted, the cars were a fairly bright mineral red–close to Floquil's Boxcar Red with a tad of Tuscan mixed in. In service, they quickly faded to a dull brownish-red, very close to thinned Floquil Zinc Chromate Primer. Often, the metalwork held the paint long after the wood weathered to a silver grey. Similarly, lettering occasionally was visible where there was little, if any paint. The inside was unpainted wood. These cars carried everything from sand to common freight to ore concentrate (carefully stacked over each truck in small heavy piles). The sand cars in this silicate service were designated with an "S" after the number. (The Great Freight of July 1979 had one in its consist.) Rio Grande heralds were used from the 1920's until 1941, when the flying Rio Grande was adopted. It took years to repaint this equipment so the flying Rio's were added gradually.

Plans for the 3000 series boxcar are readily available. The source, John Maxwell, has one, D-2, in ¼ inch scale. **MODEL**

**RAILROADER** published plans in the July 1955 and April 1962 issues. The latter also had a good article by Al Kamm, Jr. on building narrow gauge house cars.

Photos of boxcars 3007, 3018, 3019, 3055, 3096, 3132, 3155, 3169, 3177, 3219, 3244, 3252, 3272, 3303, 3347, 3390, 3468, 3522, 3555, 3588, 3612 and 3661 are available from John Maxwell. Send an SSAE for a price list to 3220 Balsam St., Wheat Ridge, Colorado 80033. John also has photos of an "1881 boxcar body" at Gunnison.

Kits for the 3000 series have been offered in the major scales. In HOn3, Slim Princess (Balboa Scale Models), Binkley and Simpson once offered kits. Simpson's was a "body only", using Grandt hardware. Currently, Railline offers a superb styrene model, and Tomalco markets an exquisite craftsman wood and plastic kit. Empire-Midland imported a brass car. Detail parts are available from Grandt, Tomalco, and trucks are made by Grandt, Westside and Rio Grande Models.

In Sn3, Tomalco produces a fine car, and I hear rumors of other manufacturers issuing a kit once in a while. On3'ers have been offered quite a variety of kits too. Darr and Valley Car Works once sold wood kits, some of which featured Grandt's first castings, in a flaming red plastic yet! Simpson did a wood kit and Empire-Midland's brass import won the weight award. Tomalco produces a fine kit with amost every part represented. Clousercast epoxy cars have also been offered by Scale Railway Equipment Co. of St. Louis. Parts and trucks for On3 have been manufactured by Grandt, and Rio Grande Models and Tomalco does the same in Sn3.

By no stretch of the imagination is this information 100 percent complete or accurate. *Your* corrections, additions, and deletions are always welcome, as are your comments. An SSAE even brings a reply.

Moving right along, in the news, *big* news! PBL in conjunction with the **GAZETTE** may once again run a Great Freight operation this summer. An expanded version of Great Freight '79, current plans are for at least a 2-day extravaganza culminating in a 24-car freight from Cumbres Pass down to Chama. "Super Freight"–how does that sound? Narrow Gauge fun in '81? Tentatively, this even would take place the week *before* the NMRA National Convention in San Mateo, California late August. Also tentatively, buses would be used for transport with no riders on the train, with tickets sold for one or both days. Those who attended Great Freight were uniform in their praise–it was lots of fun. So if all goes well, perhaps this summer will be triple fun: the NMRA Convention in our backyard, Super Freight, and the National Narrow Gauge Convention in October. Watch the **GAZETTE** for details, but please don't write or call yet–it's too early.

As a final note my current plans call for a trip to Europe mid-May to mid-June. I would love to meet some of our overseas readers in London, and elsewhere in England, Paris, Zurich and Germany. Drop a line if interested.

Well, that's all boys and girls. See you in May. Until then, build a boxcar and share the results with your fellow modelers in the Gallery.

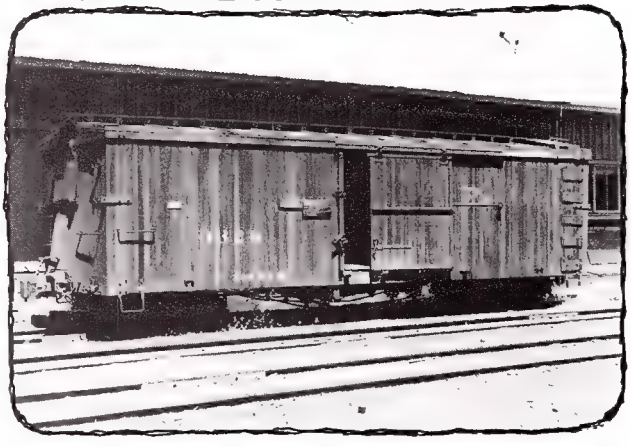
McCoy, Dell, Coleman, Russ. *Rio Grande Pictorial.* Sundance, Silverton, Colorado, 1971.

La Massena, Robert. *Rio Grande to the Pacific.* Sundance, Silverton, Colorado, 1974.

Beebe, Lucius, and Clegg, Charles. *Rio Grande, Mainline of the Rockies.* Howell-North, Berkeley, California 1962.

*Colorado Rail Annuals,* Colorado Railroad Museum, Golden, Colorado.


*Photos by Bob Brown*



# Quincy Mining's Big Hoist

**by Paul Meier**
**Drawings by Wayne Weslowski**

One would hardly expect to find the World's largest Steam Hoist in the American Midwest. But in 1920, the Quincy Mining Company and the Nordberg Manufacturing Company erected the huge hoist at the former's #2 shaft on Quincy Hill overlooking Hancock, Michigan. The hoist was then and is now the largest ever built. The #2 shaft soon became the deepest in the Western Hemisphere. Both the hoist and the shaft have been preserved through the efforts of the Quincy Mine Hoist Association. The hoist at #2 is a particularly fine representative of both steam technology and the Michigan copper country. The copper country has a long tradition of pioneering in mining technology and has been home to several successive World's largest hoists. As the mines matured and deepened, the great hoists became the show-pieces of the Michigan copper range. Oiled, polished and even named, the hoists were the pride of their owners and the highlight of a tour of a surface plant.

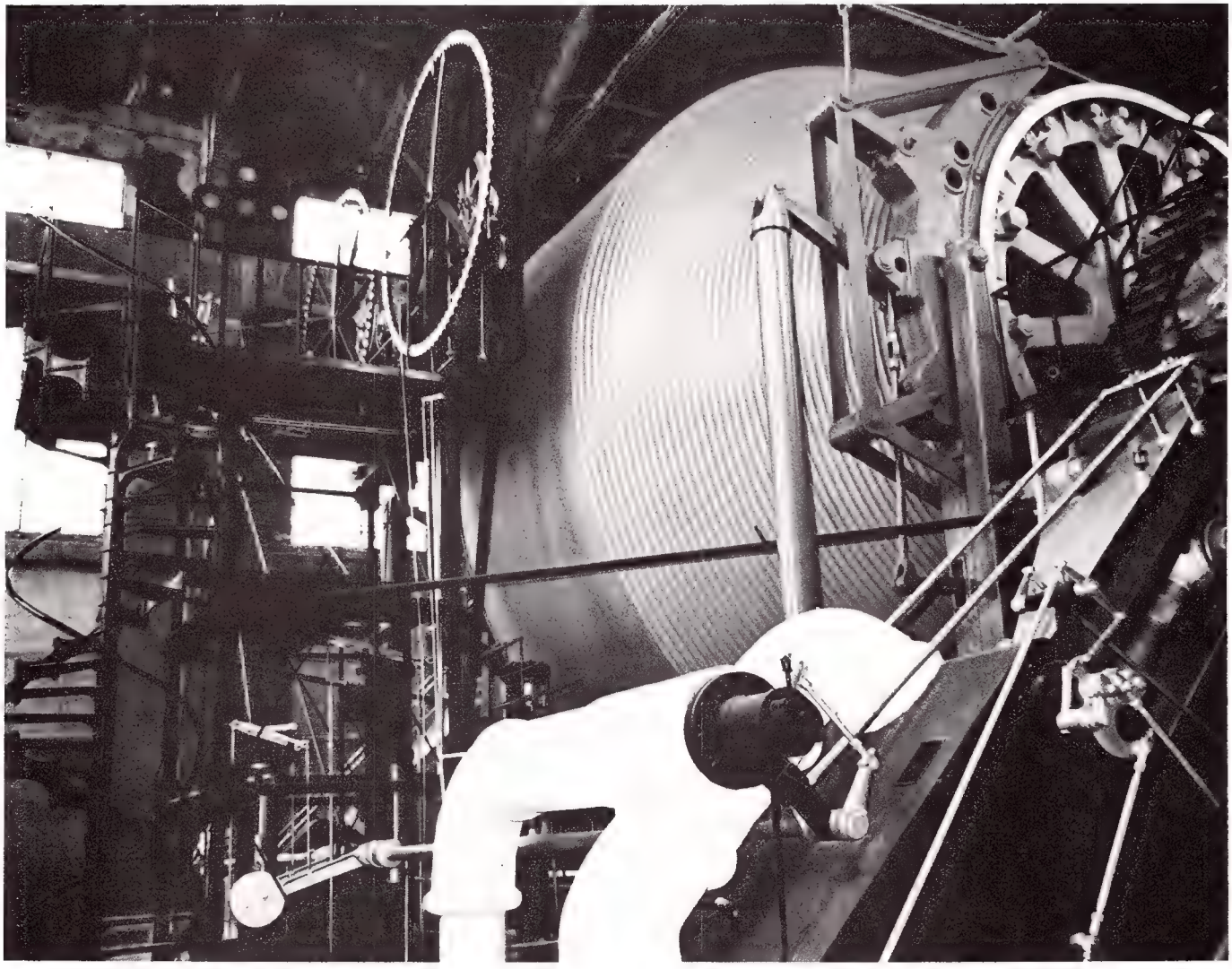
The Quincy Mining Company was organized on March 30th, 1848 to mine native copper. In 1856, the company began operations in the Pewabic Lode where #2 is located, operations which continued until 1945. During its heyday, the Company earned the nickname "Old Reliable" due to its outstanding dividend record. Once the Pewabic Lode was proven, the Quincy was quick to adopt innovations and develop the mine. Deeper mining prompted larger hoists, and the predecessor of the Nordberg engine was installed in a stone hoisthouse in 1882. In 1908, the present steel rockhouse was built and the mining pushed deeper. By the early stages of World War I, the limits of the old Corliss engine were about reached and the Quincy was in the market for a new hoist for #2 – one of extraordinary size and efficiency.

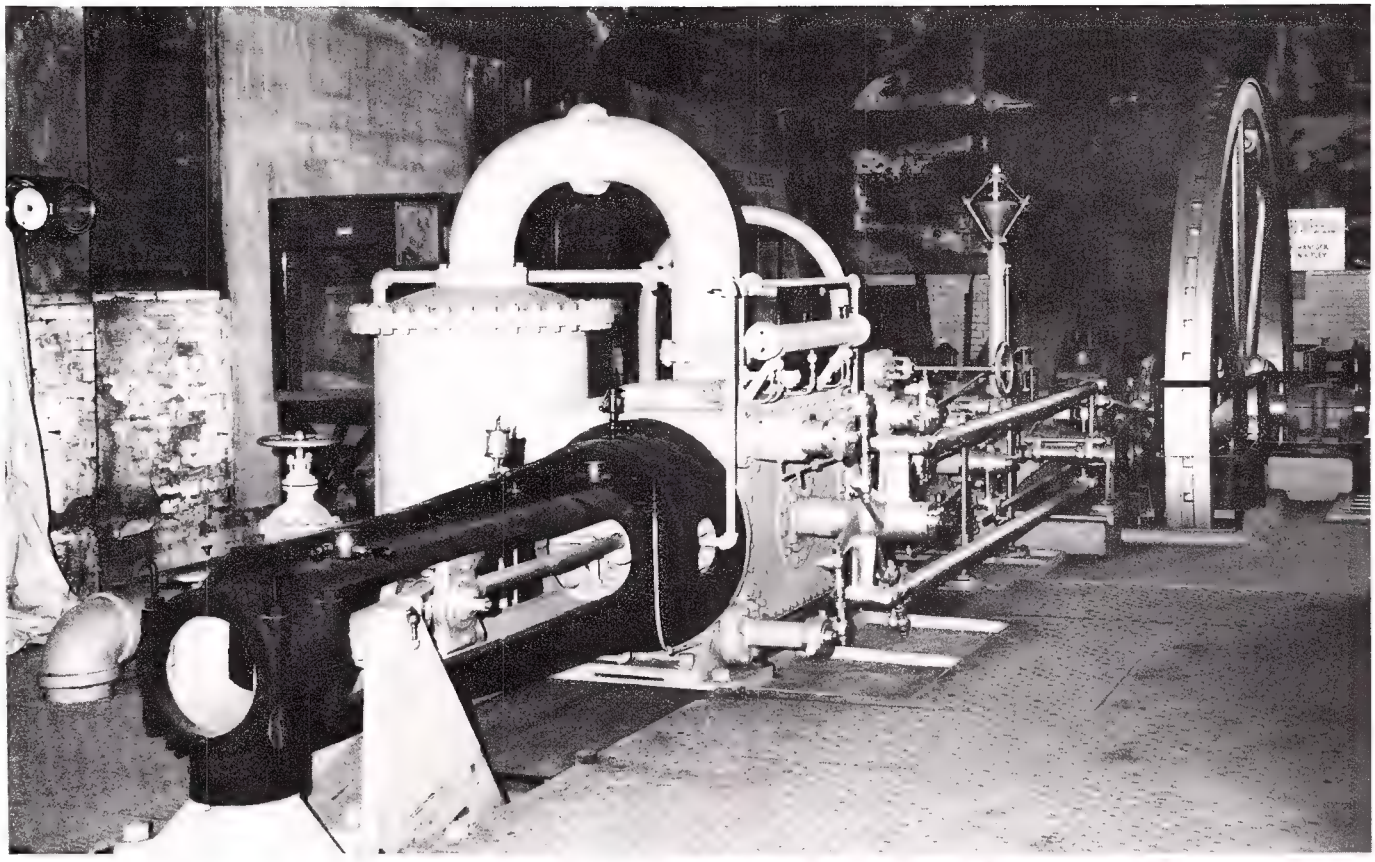
The Nordberg Manufacturing Company of Milwaukee was the logical choice for the project. Nordberg Manufacturing was

*Below:* The hoist as restored by the Quincy Mine Hoist Association. The spiral stair case leads to the hoistman's station, three stories above the floor. The two large "wheels" on the platform are the level indicators for the skips. The grooves on the drum guide the cables as they wind. One of the brake shoes is prominent over the low pressure cylinder in the foreground. *Photo by Wayne Wesolowski.*

*Opposite top:* The condenser water pumps on a lower floor. The dry air pump and steam cylinder are both controlled by Corliss valve gear. *Photo by Paul Meier.*

*Opposite bottom right:* The maze of linkage required to drive two sets of Corliss valve gear is evident in this view of the low pressure end of the engine. The stairs provided easy access for the oilers and wipers who maintained the hoist. The railings were originally polished brass, unfortunately they were stolen by vandals. *Photo by Wayne Wesolowski.*





**Hoist Specifications**

Weight: 1,765,000 pounds.

Dimensions: 60 feet by 54 feet by 60 feet high.

Engine: Cross-compound Corliss type, with two 32-inch diameter high pressure cylinders and two 60-inch diameter low pressure cylinders. 66 inch stroke. Horsepower produced: approximately 2,500.

Hoist Drum: Cylindro-conical type, 16 feet in diameter at ends, and 30 feet in diameter at center, with a capacity of 13,000 feet of 1⅝ inch wire rope. Weight of drum without shaft: 516,000 pounds.

Foundation: 3,000 cubic yards of concrete.

Skip weight: 10,000 pounds.

Skip load: 20,000 pounds.

Wire rope: 1⅝ inch diameter, 4.15 pounds per foot.

Maximum hoisting speed: 3,200 feet per minute (36.4 miles per hour).

**Cost of the Hoist**

| | |
|---|---|
| Nordberg Engine | $181,632.20 |
| Erection of Engine | 32,154.50 |
| Installation | 1,891.91 |
| Crane | 6,463.46 |
| Grading for Foundation | 377.85 |
| Pulley Stands | 16,462.10 |
| Batter Brace | 6,709.59 |
| Steam Receiver | 1,801.25 |
| Cooling System | 12,361.69 |
| Building | 57,924.18 |
| Miscellaneous | 10,604.20 |
| Engine Foundation | 42,668.22 |
| | $371,051.15 |

The Quincy Mine Hoist Association, Inc.

# Compound Steam Hoist Installation of The Quincy Mining Company

*A paper presented by Ray W. Armstrong to the Lake Superior Mining Institute in August 1922*

The hoisting of Copper rock at the Quincy Mine, where the present mining operations have reached the inclined depth of about 8,000 ft., necessitated the installation of machinery of extraordinary capacity in order to hoist from still greater depths. This condition was met and resulted in designing the largest steam hoisting engine in the world which is located in No. 2 hoist house. The hoist operates in balance at a speed of 3,200 ft. per min., using steam at a pressure of 160 lbs. per sq. in. and is capable of hoisting ten tons of copper rock per trip.

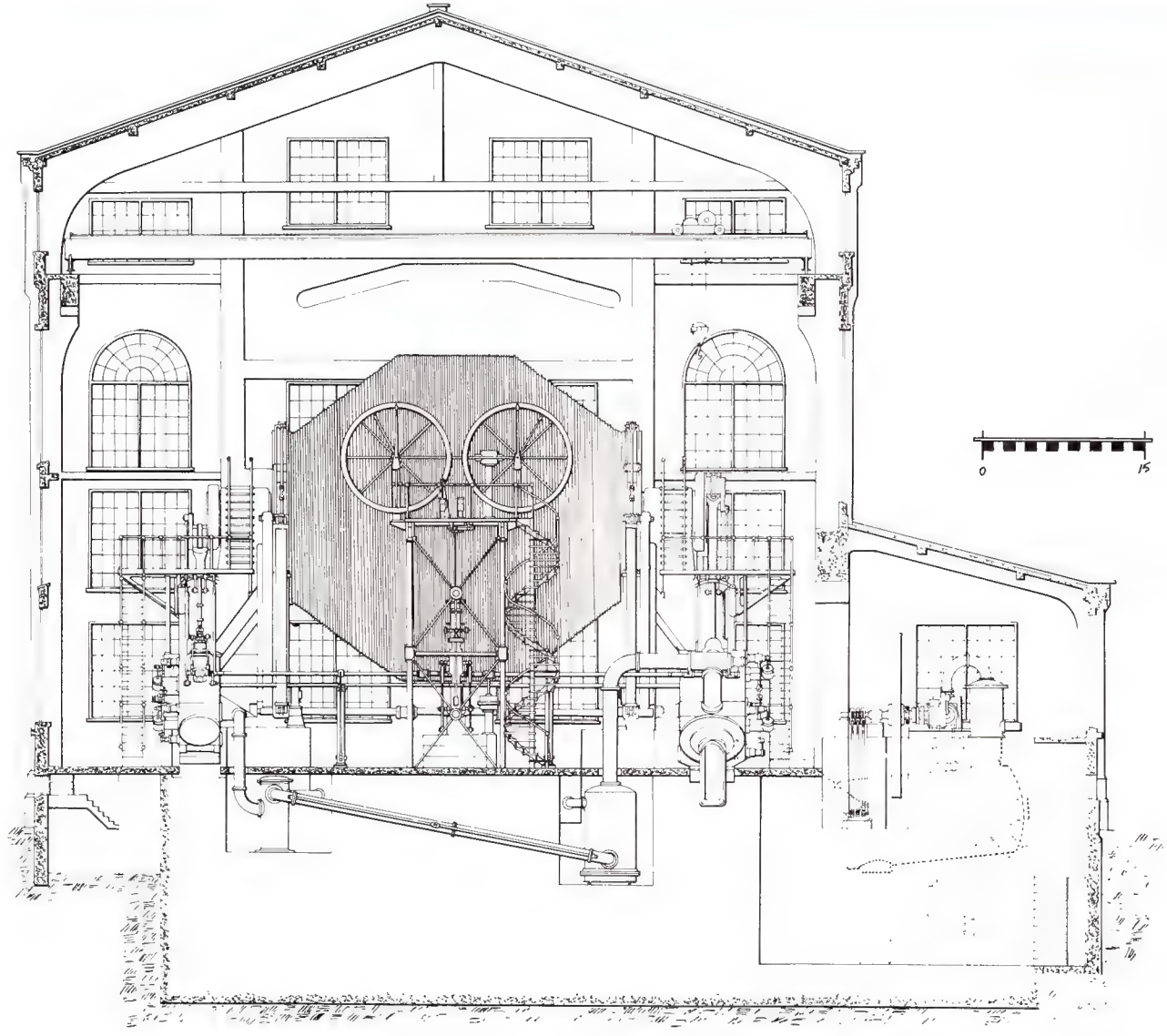
The engine is cross compound, condensing, with two high-pressure cylinders set 45° from the vertical, mounted on a triangular frame at one end of the drum shaft and two low-pressure cylinders similarly set and mounted at the opposite end of the drum shaft. The cylinder dimensions are 32" and 60" × 66".

The drum is cylindro-conical, having 16' end diameters, 30' center diameter, and is 30' long with a capacity of 13,300 ft. of 1⅝ths rope. The drum is built up of 48 sections, bolted together and thoroughly trussed within, thereby preventing any deflection of the drum shaft. There are two take-up drums, one mounted at each end and within the main drum to carry the surplus rope. They are operated independently of the main drums by 10 hp. Dake engines. Eight impulses per revolution, together with the great mass of the drum, which weighs 516,000 lbs., eliminate practically all pulsation in the hoisting rope.

At each end of the drum is a set of brakes of the improved parallel motion type, which are actuated by an oil cylinder. The brakes are applied by a fixed weight and relieved by the thrust of the oil cylinder. The oil is pumped by two triplex pumps to an accumulator of the loaded plunger type. The accumulator furnishes oil at 100 lbs. pressure to the hydraulic cylinders for the operation of the throttle, brake, and reverse. In case the oil pressure should fail, the brakes would be automatically applied.

The operation of the hoist is fully protected by an improved safety stop, whereby the throttle valve is automatically closed as the skip approaches the brace and in a case of overwinding, the brakes are applied automatically. The controls are so arranged that at the completion of a trip, the operator cannot open the throttle until the engine is reversed. Overspeeding is prevented by a governor which controls the cut-off cams of the valve gear.

The condensing apparatus is of the counter current jet type and consists of a dry air pump set in tandem with the steam cylinder, while the pumps for the circulating water are located on a



lower floor and are driven through a rocker arm from the piston rod of the dry air pump. The steam cylinder is 14"×36" and the dry air pump cylinder 22"×36". The two water pumps are each 24"×12" single acting. The hoist exhausts into a steam drum 8 feet in diameter and 17 feet long, containing a series of trays over which the water flows in the form of curtains through which the exhaust steam must pass. This drum is provided with a vacuum breaker which prevents the accidental flooding of the low-pressure cylinders. The steam cylinder of the condensing apparatus also exhausts into the drum. The dry air pump exhausts into the atmosphere. The condensing apparatus is designed to take care of 1,460 lbs. of steam per 10,000 ft. trip.

The combined weight of the hoisting engine and the condensing equipment is 1,765,000 lbs.

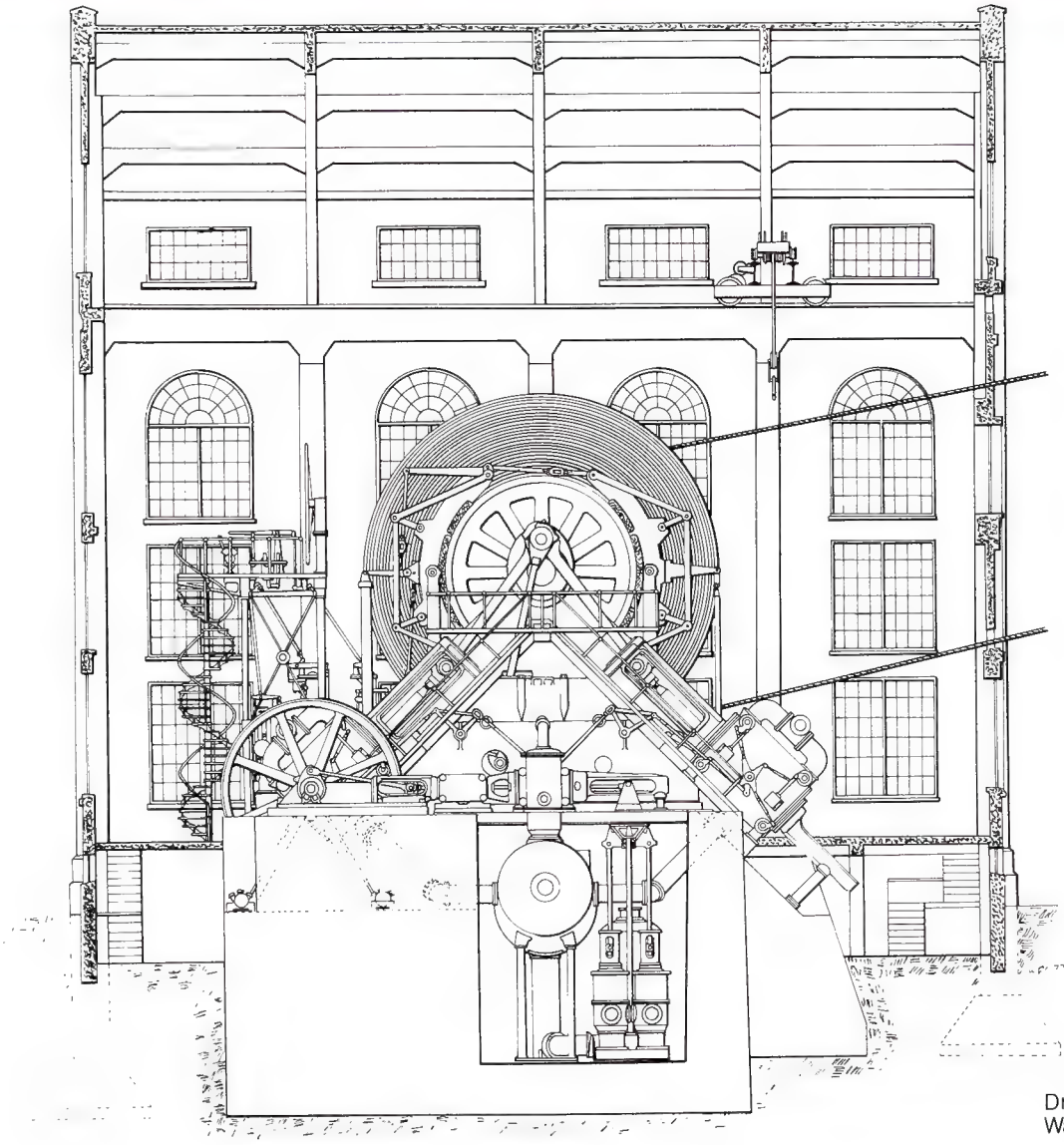
The hoisting efficiency has been greatly increased by the installation of this new equipment as compared with the old 48"×84" simple duplex, Corliss, non-condensing hoist equipped with a cylindrical drum. During the year 1921, with the mine operating at 57% capacity, the coal consumption of the new hoist was 2,400 tons less than previously used for the same amount of hoisting.

The hoisting engine and condensing equipment are set on the largest block of reinforced concrete ever poured for an engine foundation. This foundation is 54 ft. wide, 84 ft. long, and contains 3,200 cu. yds. of material. The reinforcing material consists of 8 tons of steel rail and 8,000 ft. of discarded 1½" plow-steel hoisting rope, which has been annealed. This foundation rests on hard-pan having a bearing value greatly in excess of the loads carried.

The main building enclosing the hoist is 72 ft. 4 in.×76 ft.×82 ft. high, and that part of the building enclosing the condensing equipment is 23 ft. 1 in.×76 ft.×32 ft. high and built as a lean-to on the main structure. The construction is entirely of reinforced concrete. The design of the building is such that 20 pilasters carry the loads directly to their footings. The walls between the pilasters are brick veneer and the concrete roof is covered with green glazed Imperial Spanish tile.

The building is securely anchored to the main foundation by both steel and concrete girders, all of which are cast integral with the reinforced concrete floor. The superstructure of the main building is braced 26' above the main floor by the lean-to roof which was designed for that purpose. All windows are glazed with horizontal ribbed glass and are mechanically operated for ventilation. A travelling crane of 40 ton capy. having a span of 67 ft. and made up of two 30", 200 lbs. per ft. I-beams was installed for the hoist erection.

The circulating water from the condenser is pumped by the condenser pump to a cooling pond where it passes through a spraying system of 45 nozzles at 1,800 gal. per min. This water then flows to a second pond and system if it has not been cooled sufficiently by the first. A centrifugal pump is used to pump the water through the second system. The cooling ponds are concrete, 50'×150' with a total capacity of 340,000 gal. of water.



Drawn by
Wayne Wesolowski

The scene today. A narrow gauge rock car is in the foreground and the old hoisthouse is alongside the new. One of the mineheads or rock houses is in the background. *Photo by Wayne Wesolowski.*

founded in 1886 by Dr. Bruno V. Nordberg, a Finnish immigrant who arrived in America in 1879. Dr. Nordberg was first employed as a design engineer by the E.P. Allis Company which supplied heavy machinery to the Michigan mines. At Allis, Nordberg first became involved with hoist design. Eventually Nordberg left Allis and founded his own company. He planned to manufacture a new steam cut-off governor of his own design. The Nordberg Company soon established itself as a leader in the design and manufacture of efficient steam machinery. In 1897, Dr. Nordberg developed the then largest hoist in the world for the Tamarack Mining Company at Calumet, Michigan. By the time Quincy Mining contacted the firm about the hoist for #2, there was hardly a mine in the copper country that didn't boast some Nordberg equipment.

Nordberg based the design of the new hoist on Quincy's current and projected needs. However, the Quincy hoist is basically an expanded and improved version of the earlier Tamarack engine. Construction of the hoist started but was suspended after the U.S. became involved in World War I and didn't begin again until 1920. The new hoist and hoisthouse were built just north of the old ones, and began operation at the end of 1920.

By building the new hoist at the side of the old, Quincy was able to continue operations in the shaft during construction. It was, however, necessary to modify the batter brace of the rockhouse in order to compensate for the new angles of force, and to reset the 12-foot sheaves in the rockhouse. But this was a minimal shutdown. As soon as the new hoist was in operation, the old one was removed. The new hoist was an immediate success and became the pride of the copper country. The engineering world took due note of the great hoist. (See Ray W. Armstrong's description on page 28.)

Only one change was made in the original design. When a hoistman dozed off, the Nordberg hoist controller did not work. The throttle did not close and the brakes did not apply; the skip continued through the rockhouse. The Nordberg controller was replaced with a Lilly unit.

As the 1920's progressed, it seemed that the great hoist would eventually be pushed to its limits. The mine development continued and the #2 shaft reached an incline depth of 9,260 feet, making it the deepest in the Western Hemisphere. This was close to the nominal capacity of the hoist, which is 10,000 feet. The 13,300 foot cable capacity that Armstrong mentions could be obtained by winding down on the opposite cone of the drum. This would give the hoist an ultimate depth limit of 13,300 feet, at a sacrifice of speed and efficiency. The hoist was designed to work in balance at 10,000 feet. Two skips were used, their cables winding on opposite ends and sides of the drum, thus, the loaded skip at the bottom of the shaft would be winding on the lower end of its conical portion of the drum while the other skip at the top of the shaft would be winding off the cylindrical portion of the drum. When the hoist starts, the empty skip, which has a leverage advantage by winding off the larger diameter, helps raise the loaded skip. This balanced arrangement, coupled with the leverage advantages of the cylindro-conical drum, minimized the energy required to hoist the rock. Winding down the opposite cone would reduce the difference in leverage and would increase the force needed to start hoisting the loading skip. Average speed would be lowered since the cables would be winding on the smaller diameters for a larger portion of the trip.

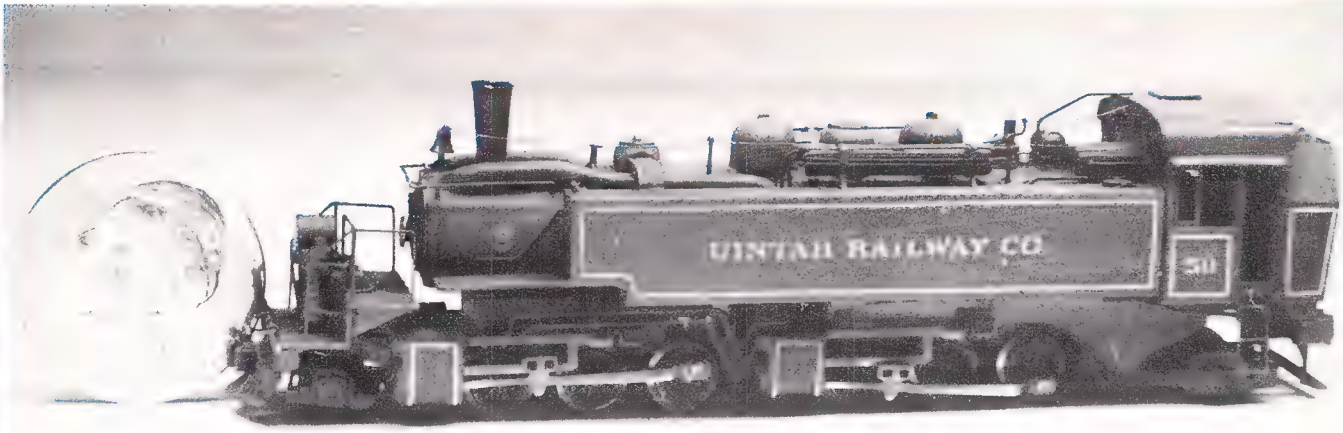
In the prosperity of the 1920's, the great hoist and shaft symbolized the strength of the copper country. Here was the Quincy Mining Company nearly 80 years old, operating in the Pewabic Lode for over 70 years, going deeper with the World's Largest Hoist. It looked as if there would be no end to these mines. Unprecedented records of depth and longevity had been set, yet dividends were still being paid. The great hoist was the outstanding example of the permanence of the Michigan copper range.

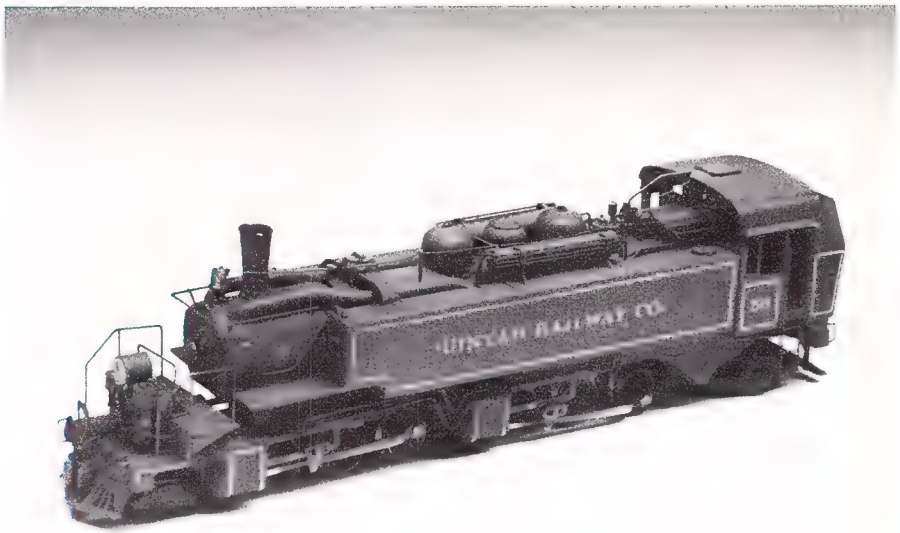
Unfortunately, the economic collapse of 1929 destroyed the optimism and the economy of the copper country. The Quincy Company suspended operations in 1931. The #2 hoist was never used in production again. The company resumed operations at shafts 6 and 8 in 1937 only to close again in 1945. Conditions were never again favorable enough to reopen the mine.

The Nordberg hoist was almost forgotten as the mine sat idle for over twenty years. I first saw the hoist in 1962. Even rusted and vandalized, it was quite awesome. We fully expected that it would eventually be scrapped; so we always made it a point to make an annual visit to Quincy Hill to see the hoist and the other steam equipment. Happily, the late 1960's saw the formation of the Quincy Mine Hoist Association, Inc. (Box 265, Hancock, MI 49930), a non-profit organization for the preservation of the hoist. The association raised enough funds to repair the hoist-house and the hoist. Now visitors to the copper country can visit an outstanding mining display. The hoist is the main feature, but there is also a large collection of mining equipment in the old engine house and a good museum in with the hoist. Two of the Quincy's narrow gauge locomotives have been displayed since 1975. Renovation of the rockhouse is planned. Currently the hoist is open all summer.

That is the story of the Quincy hoist. Stopped short after only 11 years of use, the mammoth engine never quite reached its potential. It is interesting to speculate what would have happened without the crash of 1929 or the price ceilings of WW II. Would the mine have gone deeper, and the hoist reached its limits? The former champion, the Tamarack hoist, was rebuilt and installed at Calumet &Hecla's Ahmeek #3. The rebuilt hoist had its capacity and speed increased, and served until 1966 when the mine closed.

The drawings were prepared by Wayne Wesolowski from original blue prints. These were obtained through the courtesy of the Quincy Mining Company. The drawings and the photographs illustrate the intricate nature of the beast. Modelers should be able to produce an accurate model of the engine using this information. It would be a super scratch building project, and would end up as an outstanding display. Many of the features of this hoist appeared on smaller Nordberg engines, so this information could be useful in a number of ways.



# Uintah Railway No. 50 in Nn3 Gauge

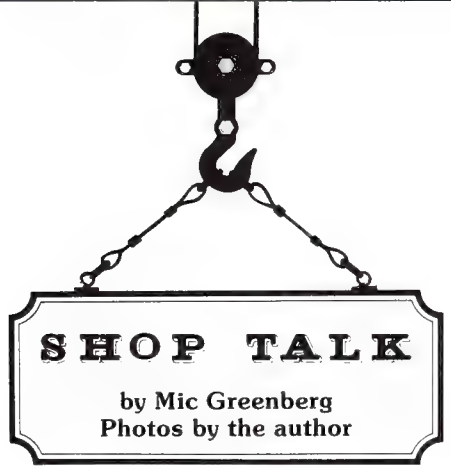
**by George Peters**
**Photos by the author**

I built my model from plans provided by John Maxwell as well as photos in recent ads in the **GAZETTE** for the Custom Brass On3 model of this locomotive. I also used the photos in Henry Bender's excellent book *Uintah Railway* (Howell-North Books, 1970). The model represents the locomotive about one year after delivery when the second steam dome and the forward water-hatch had been installed, and the air lines had been raised. The rear light had also been removed by this time.

The model is built from brass tube, channel, styrene, brass wire, epoxy and wood. The bell, stack, part of the pilot, couplers, and smoke box door are commercial parts, the rest of the body was scratch built. The domes were turned from styrene in a drill chuck, the air tanks are wood dowel with paper wrappers. The cab interior details are made of styrene, pins and wire. The air pumps are epoxy castings and the pop valves and whistle were turned from brass. Two Marklin Z gauge mechanisms were modified and joined together to make the running gear of the locomotive. Lead and trailing trucks were fabricated from scrap parts. I did not modify the valve gear or side rods on the Z gauge mechanisms because I did not want to change the running qualities of the commercial mechanisms.

The model is painted to represent #50 while she was still in her Baldwin factory paint job. Floquil Grimy Black was sprayed on the model followed by weathering with White, Rust, Grime and Engine Black. I lettered the model with Robert Sloan decals and Micro Scale stripes.

I was fortunate in winning first place in the steam locomotive category at the Pacific Coast Region NMRA contest in May 1980.




by Mic Greenberg
Photos by the author

# MORE TOOLS FOR SCRATCHBUILDING

I enjoy building things which only exist in some research document or old photo. As a matter of fact I've always wanted to build models that elicit comments like "Where did you get that idea?" or "Who makes this kit?" I learned that to be *that* kind of builder I was going to have to do a lot of scratch-building.

You may want to scratch-build because the model you want to make is not available in kit form or because the kit is too expensive. Whatever the reason there is no lack of information, tools and materials for the scratch-builder.

My first scratch-built model was the Trans-Florida Central railtruck (**GAZETTE** July/Aug 1978, out of print) I cut the strips of styrene for its mosquito-nosed cow-catcher with an X-Acto knife and straight-edge. Today styrene comes in strips and there are many tools to cut the exact size and shape you need. The captions and photos show some tools and methods I've found handy in my scratch-building.

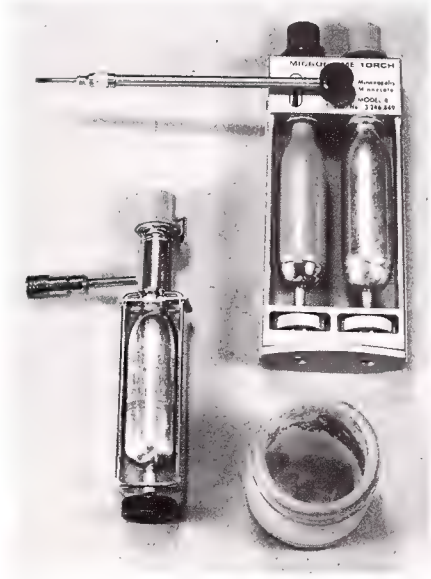
I'm an unyielding proponent of the idea that only wood can represent wood. It's great that scale wood is readily available. Working with scale wood is about the greatest joy I've discovered in modeling. Next issue I'll discuss a technique I call "Precision Sanding". Bridges, tipples, trestles, platforms and towers can all be improved by this technique.

This old shed was ideal for scratch-building.

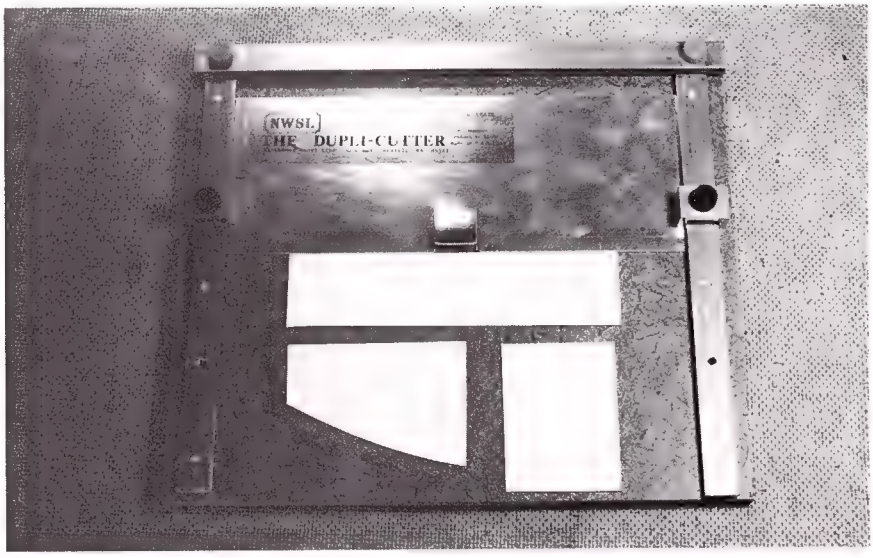
My secret method of keeping plastic cement in its place–an ink bottle holder. I really enjoy the way styrene bonds rapidly but with too much bonding agent it melts. I use caution in applying the cement and have avoided spills and meltdowns so far by using this holder obtainable at any art store.

The Northwest Shortline Duplicutter is excellent for cutting styrene. It's good for squaring up sheets up to 6¾ inches wide. It holds styrene in place while you scribe and snap off pieces and best of all you can set it to make same-size pieces where you need many parts alike. ➤

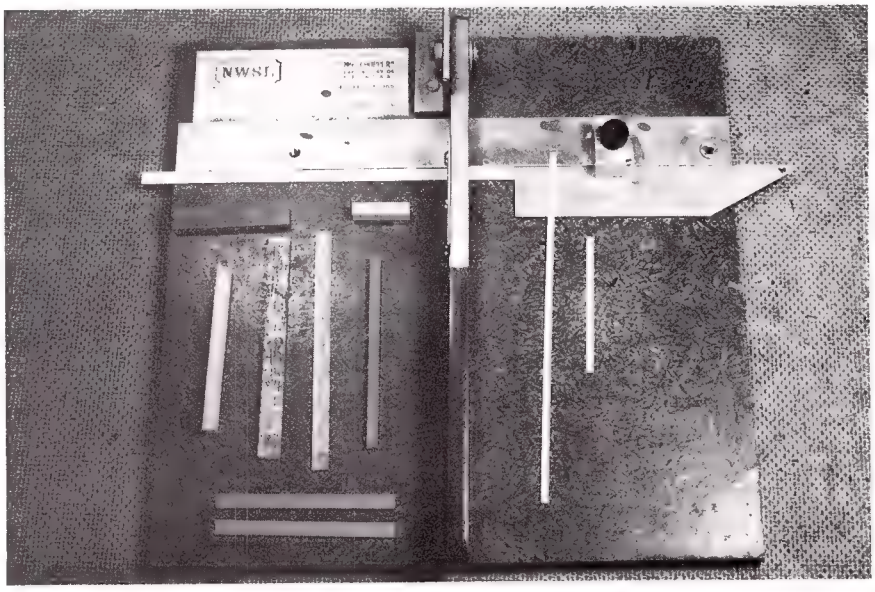
My Microflame torch with the pin-point flame tip is my favorite tool for soldering brass. The jar contains Kemtron's Liquid Solder. I join parts by holding them together with masking tape. This method is fast and very good for delicate parts. It leaves a durable joint with little residual solder.



My set of McGill paper punches. From left to right ¼", 5/16", 3/16" and ⅛". These are great for making delicate little rings as well as holes. Good for paper and styrene.




My Northwest Shortline Chopper. Essential for cutting styrene to the many different shapes I need. It's also good for cutting wood. Excellent for mitre cuts as well as right angles.



# The Saratoga Mine

**by Malcolm Furlow**
**Photos by the author**

By 1895 most of the inhabitants of Cascade Creek had thrown in the towel. Sluice boxes around the area were bringing in only about 50¢ a day, and the terrible effects of the Great Silver Panic still had a grip on the economy of the region. It would take souls of stouter stock to weather the depression that had settled on the mining camps. Served by the venerable "Rio Chama", a few of the mines that were still shipping ore were operating "tooth and nail" at best.

In the fall of 1896, the Gold Lake Mine closed its doors. Its owners salvaged only memories of past prosperity instead of revenue from processed ore. However a few miles of branch line was kept intact, because the Saratoga Mining Company's machinery rusty and weathered, was beginning to turn once more.

The Saratoga Mine was an experiment in building a structure mostly "in place". That is to say, the scenery was already in place, and detailed for the most part–the mine was simply built up against the existing terrain. Some unusual things can happen during this type of construction. A lot of ground clutter will accumulate (refuse from trimming etc.) adding to the realism. A structure built in place probably won't be too square. If not allowed to get out of hand this will add character to a mine. There is no prototype for the Saratoga Mine. Ideas from numerous publications which included photos of old mines were used. The model depicts a structure that includes a mining facility capable of partially processing its own ore, before shipment to a larger more extensive mill for further processing. This type of mill was called a "halfway house". One was used on the Sunnyside Mine in Eureka, Colorado. There, the mine itself was some 1500 feet higher in elevation than the halfway house and transported the ore to the facility via a cable tram. After partial processing, the ore was trammed down the mountain to the main mill site 750 feet below and two miles down the gulch. The two cables used were two miles in length. (*Rainbow Route* by Robert E. Sloan, and Carl Skowronski, Sundance Ltd.).

The main sides including the front and ore tipple (there is no back) were constructed from Northeastern board and batten siding material. At one time I entertained the thought of building the sides up board by board and adding my own batts. Laziness prevented this would be grand accomplishment. The sides were distressed with a wire brush, and an X-acto saw blade drawn with the grain. The wood was stained with an alcohol based stain. Peeling paint was achieved by dabbing on rubber cement to the stained sides, spraying on reefer white with an airbrush, and then removing some of the painted-over rubber cement with masking tape. Place the masking tape on the painted siding and apply pressure at random points along the tape. Applying pressure all along the tape causes the tape to remove too much paint when pulled from the siding.

Before the peeling paint effect was added to the siding, the window and door openings were cut in. After the finish had a chance to dry, the windows and doors were put in place, all except the door on the right side of the mine which was added later. Windows and doors were Grandt Line products and are painted weathered white. Most of the mines of this period were left unpainted and allowed to weather to a natural state. (Sometimes they "weathered" to a natural state of mostly dust.) I used the finish I did in order to add variety to my Denver & Rio Chama Western. The D&RCW has a large number of mines and mine related structures.

The tipple was originally designed to attach to the main building a little over to the right of its present location, somehow it got centered with the mine shaft. Old watch gears and "whatnots" were used for the ore pocket machinery.

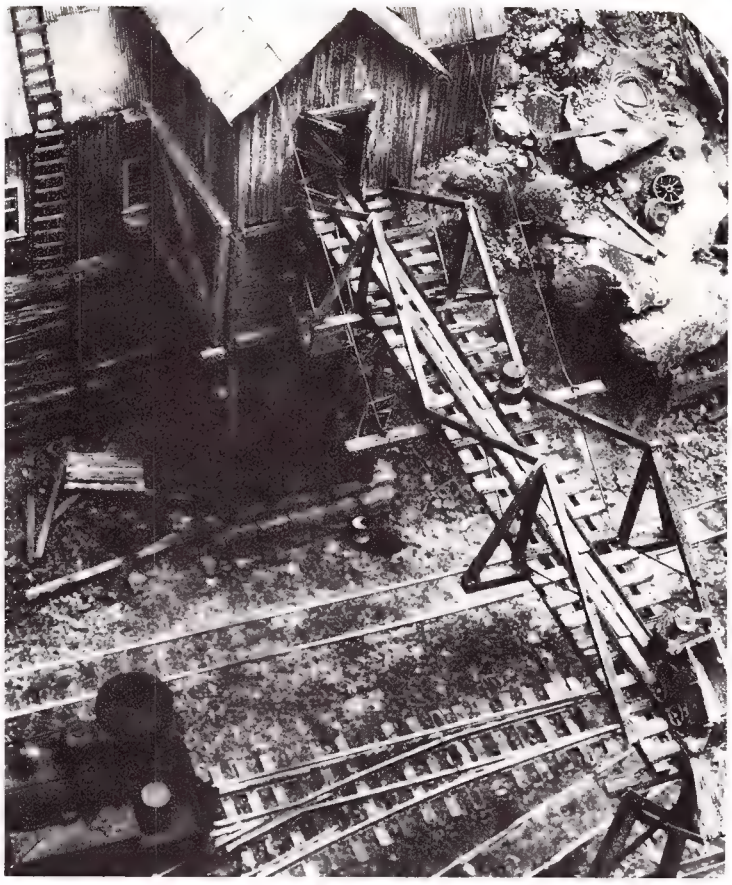
Just before I detailed the ore pocket, I decided to tear out part of my railroad to make space for a dark room. The partially built mine was relocated by Chama Creek and soon work resumed at full swing. A card stock sub-roof was put on and scribed to represent boards peeking through places where the roofing has deteriorated. The roofing material was made from Reynolds Wrap Aluminum foil, formed over a file, cut into sections and placed on the roof with contact cement. (Some sections were left off, or distressed to show the scribing previously mentioned.) The roof was sprayed gray, then an over-spray of roof brown and rust mixed together was applied using an airbrush. Thinner was allowed to flow down the roof from a small brush to bleed and streak the colors. The whole roof was then dry-brushed with silver for highlights.

Details make a simple structure such as this stand out especially details of the litter that always surrounds old but active mines. I used everything from old rusty wheels to old weathered wood. There are cables lying about, and old boxes, and gears and anything I could think of to "busy" the scene and add character.

The staircase on the right side went together fast. I used pinking shears to cut the staircase sides and a jig to cut the steps to proper length.

Other details include the smokestacks on the roof made from dowels. The industrial type lamps were made from wire and metal from an old toothpaste tube which was cut with a paper punch and formed in the top of a pinvise. The ore track that leads from the tipple is laid with code 40 rail glued to Campbell ties and gauged 18 inches in width. The ore track bridge was needed in order to span various yard tracks running in front of the mine. I added a few bits of rusty code 40 rail to the waste dump. Some old wheels and a few rotted boards or ties here and there were added for realism. The tank on top of the mine was made by gluing individual boards to a Kodak 35mm plastic film conainter cut in half and placed on a platform. Don't forget an ore cart or two, a few figures to liven things up a bit and you're ready to start shoving gondolas under the ore pocket.

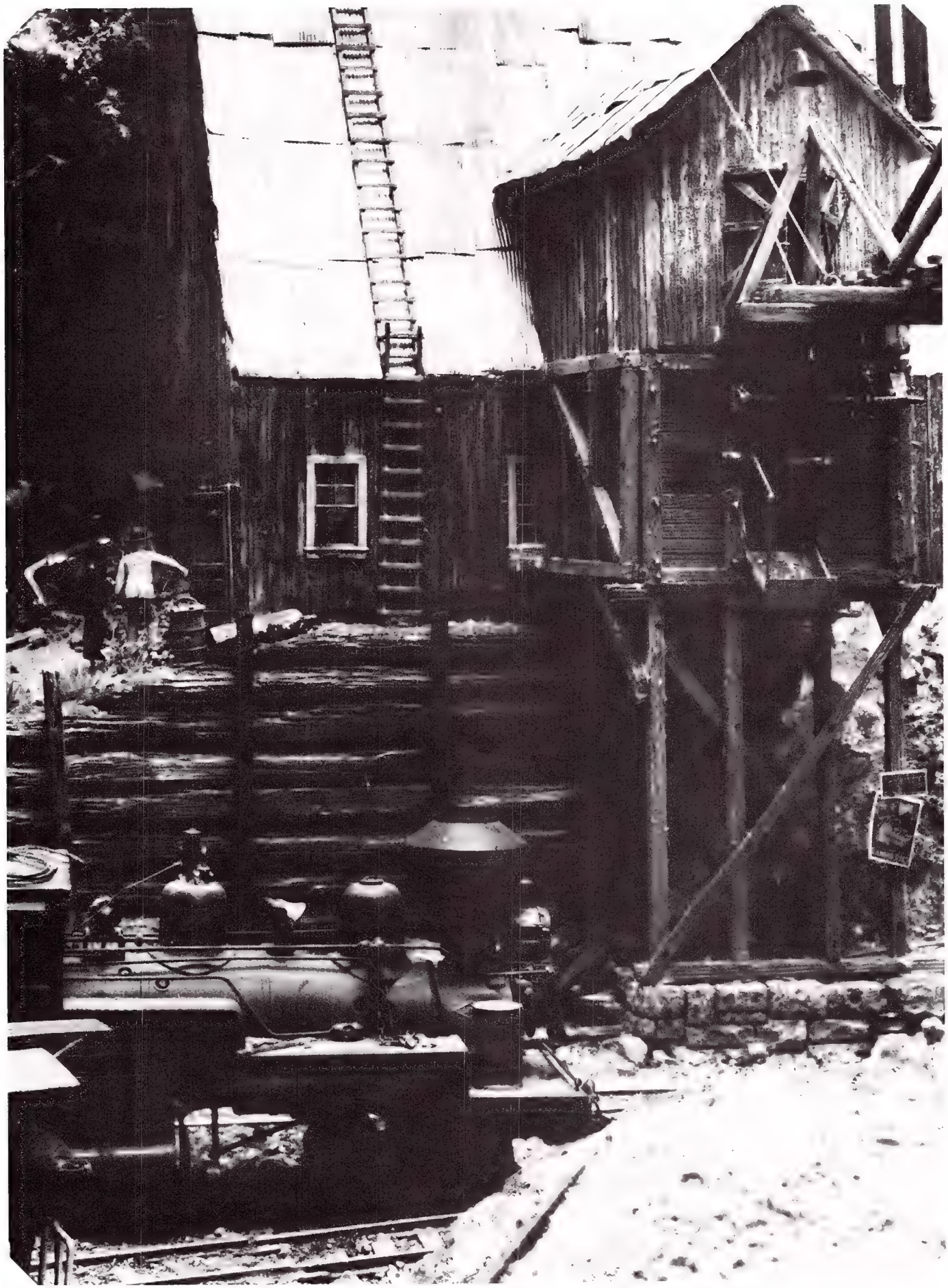
The mine in its original location showing the sides in place against the mountainside.



The ore track and bridge showing the "clutter" around everything.

Here the ore tipple has been added. The lean in the tipple was caused when the mine was moved from its original location.

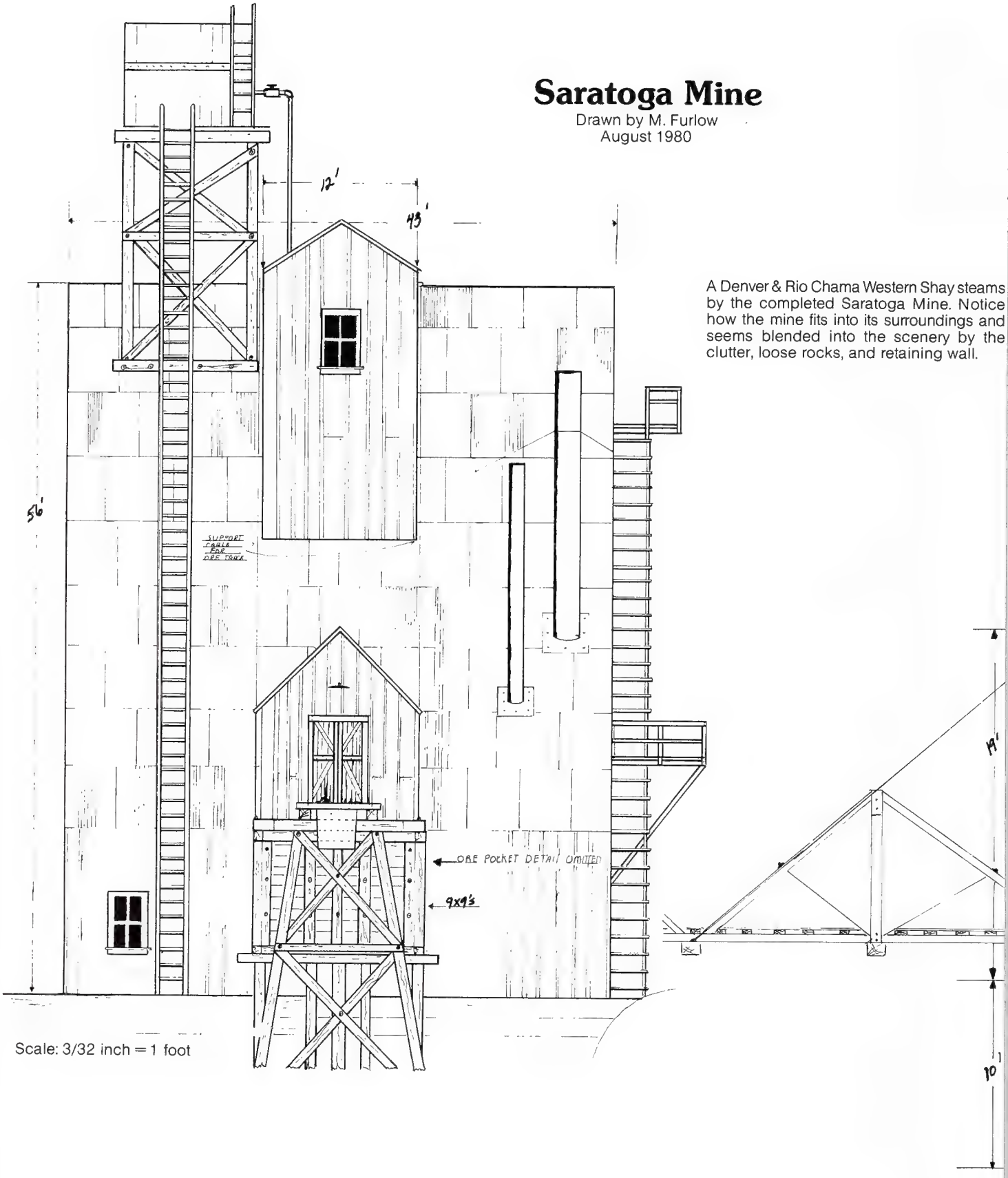
This photo shows how the sides were cut to fit the mine's location.



A close-up of the ore pocket and related parts. Notice the window behind the tipple. When the tipple was finally centered the window was partially hidden.

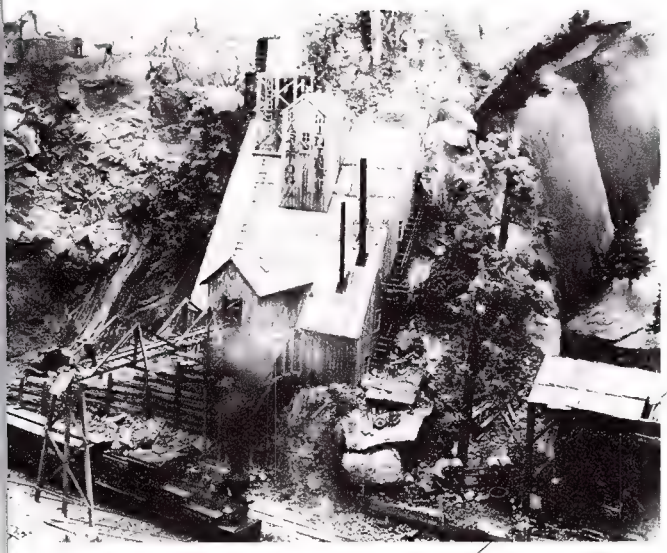
# Saratoga Mine

Drawn by M. Furlow
August 1980




A Denver & Rio Chama Western Shay steams by the completed Saratoga Mine. Notice how the mine fits into its surroundings and seems blended into the scenery by the clutter, loose rocks, and retaining wall.

Scale: 3/32 inch = 1 foot



3.5mm = 1 foot

# Building Phillips

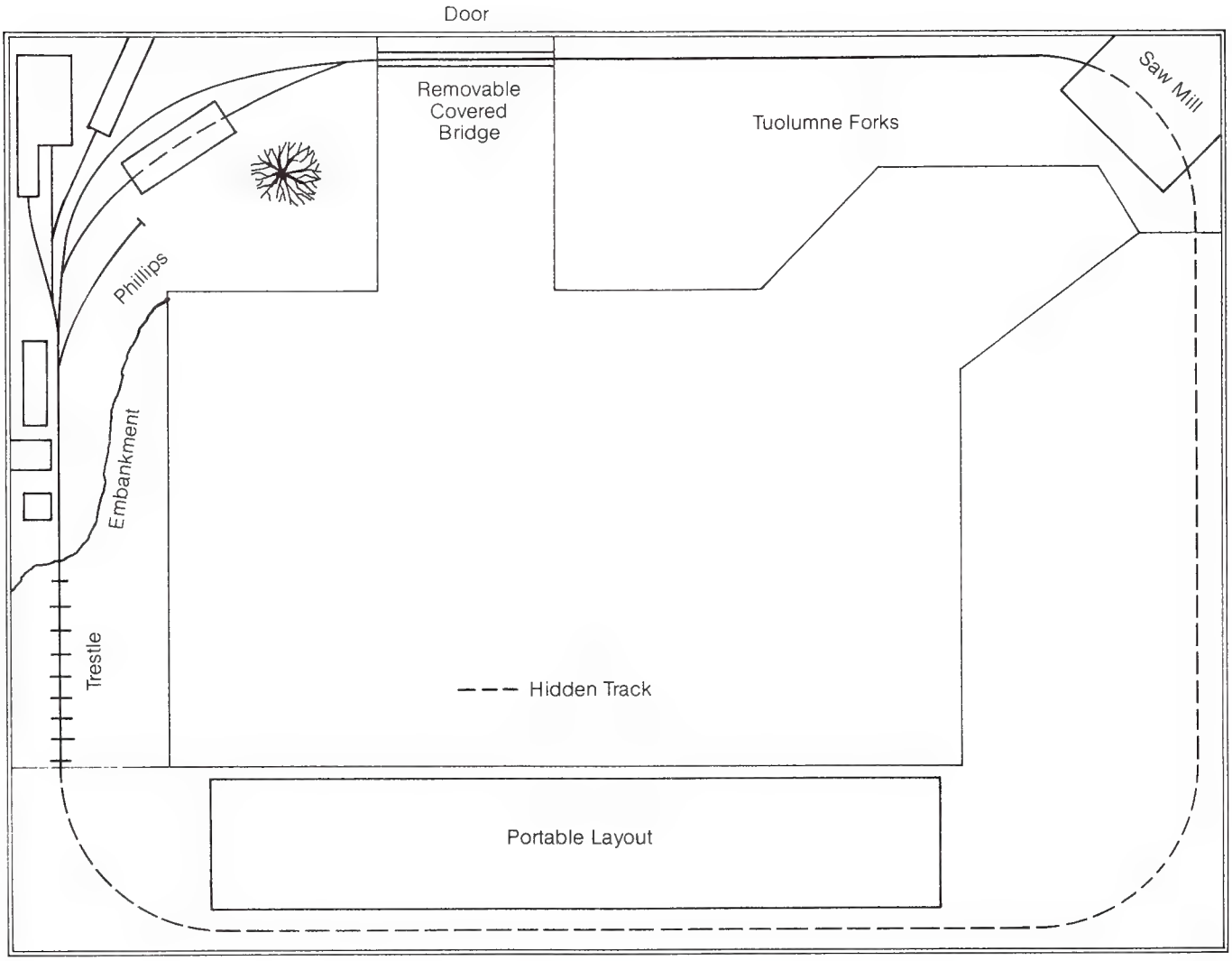
## Part 9: The Site

**by Bob Brown**

Several of you have wondered how my Phillips, Maine scene fits into my Tuolumne Forks logging scene. In this article I plan to show you how I have placed my Phillips scene into my layout room.

Before I describe the Phillips site I want to mention some final details that I have added to the scene. One of the problems in building a prototype scene is finding accurate information on the many details that were never photographed or recorded. As I mentioned in the first article in this series, make sure you have ample prototype information on any scene before you decide to build it. One mystery on the Phillips scene was what kind of switch stands were used. None of my photos of the early scene showed switch stands so I had to do some guessing. The only photograph I had which did show switch stands in Phillips was taken sometime between 1897 and 1900. In August 1897 a new five-stall wooden roundhouse was built to replace the old barn like engine shed that

This early view of Phillips was taken around 1900. It shows the five-stall wooden roundhouse which was built to replace the engine shed depicted on my Phillips model. Notice the stub switches and the two styles of switch stands. I choose to use the stand shown to the left of the photo. Also notice the water stand just behind the left hand switch stand and the car shop behind the passenger car in the center of the photo. The car shop was left over from the early Phillips scene and is on my model. *Photo collection of Bob Brown.*



An early view of my Tuolumne Forks scene. This photo shows how I use the area under my layout. Notice how the file cabinets determine the height of the layout. My main workbench is under the scene and the layout is bent in at that point to prevent me from hitting my head every time I get up. The room has been changed since this photo was taken; I now have a blue background behind the scene and the control panel is different. I have also replaced the details at the far corner of the room with a sawmill which is well along by now. Phillips is to the far left of this picture and part of its track runs along behind the TF scene next to the wall. *Photo by Gary Wincott.*

Flanger signs out on the Sandy River & Rangeley Lakes line at Davenport Flats. This photo was taken in 1922 and shows a spring flood which has washed out the road crossing. *Photo collection of L.B. Walker.*

burned in July of that year. When they built the new roundhouse they also built a new outside turntable. They also must have laid some new trackage to accomodate the turntable. My photo was taken within three years of the date of my scene because it shows the wooden roundhouse which was damaged by fire around 1900 and replaced by a five-stall brick roundhouse. The photo shows a cast switch stand very similar to the casting set made by Hetch Hetchy Scale Models as their Nevada County Narrow Gauge switch stand. I was fortunate to locate several of these switch stands at Peninsula Hobbies in San Mateo, California. Other photos taken at other Sandy River locations showed standard switch stands in use but with high targets to show above the snow level. The photo mentioned above also showed a square frame switch stand in the foreground. Sandy River & Rangeley Lakes ICC valuation sheets dated 1916 show drawings of both the standard switch stand and the square type stand. I mention all of this to show you how you might have to interpret information when you build a scene. I may be wrong on these stands but I have made my best guess.

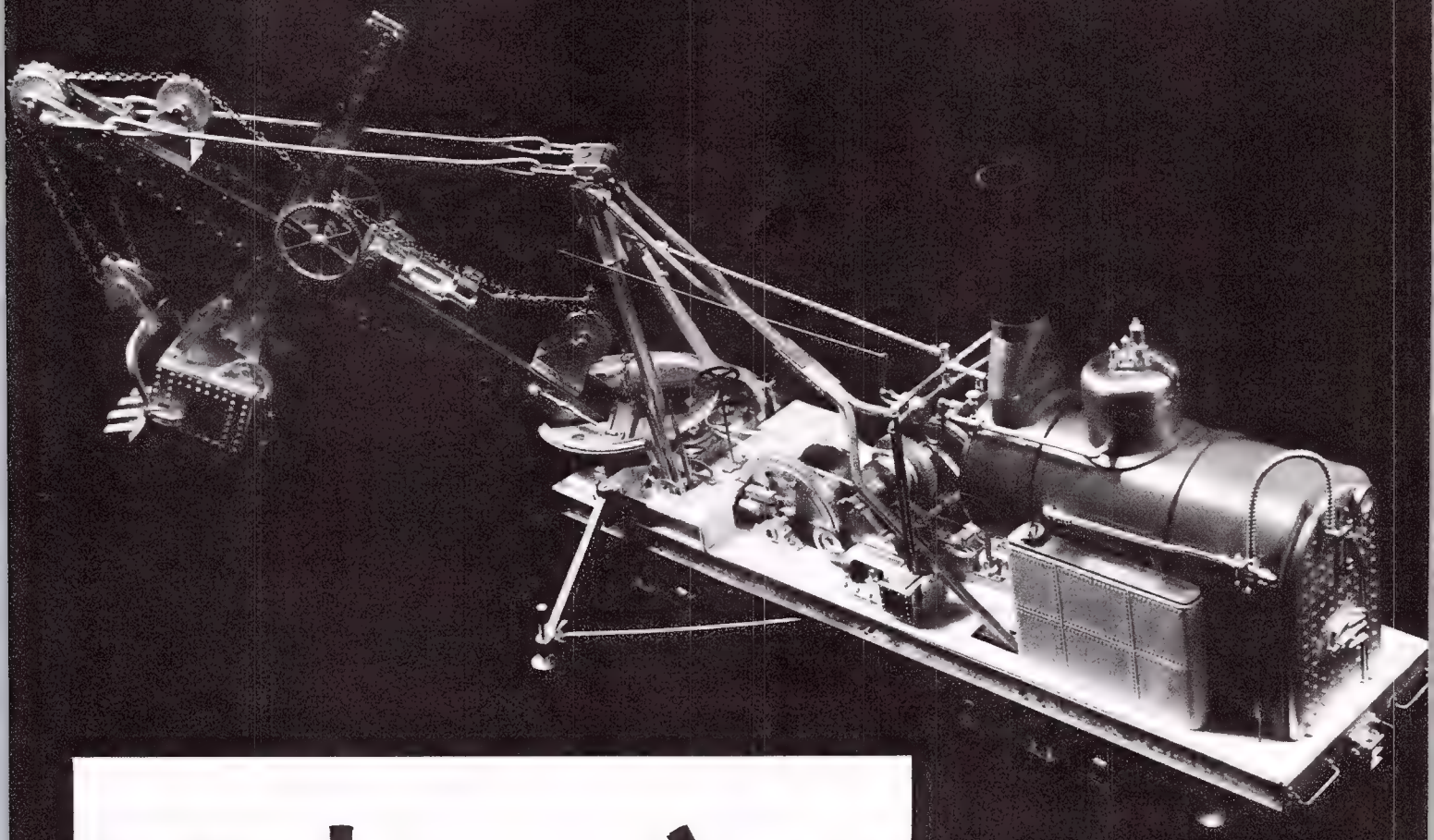
Another interesting feature in my Phillips scene are the flanger signs. These are high board signs with cross pieces which mark obstructions. When a flanger crew sees such a sign they raise the flanger blade until they are clear of the obstruction. I placed one of these signs at each end of Phillips. One of my photos (not included here) clearly shows one of these signs on a little wooden platform at the end of the trestle.

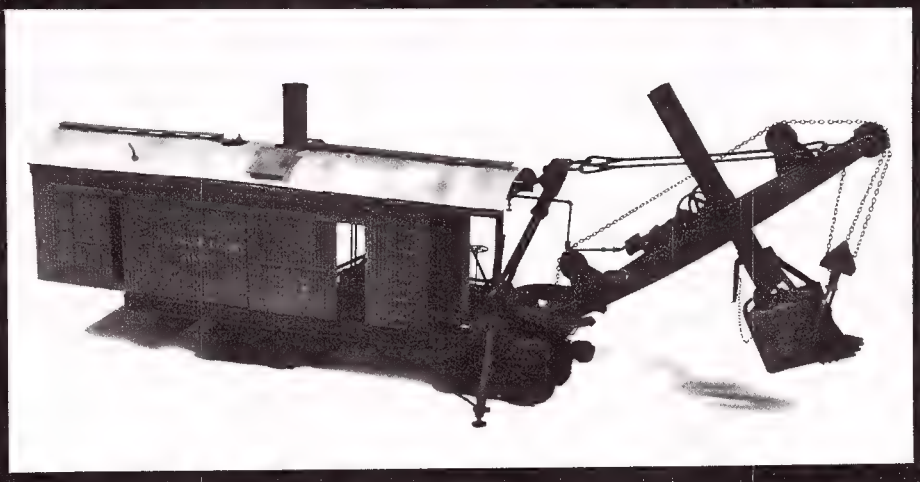
My layout room consists of a converted one car garage which I closed in, insulated, and paneled. It is about 12 feet by 21 feet. However, it also has to serve as a shop, school planning office, and library. Phillips was built around one corner of my room. I moved my Tuolumne Forks scene out six inches so I could run a two-foot gauge mainline behind it. This allowed me to loop my room so a train can run continuously through Phillips and around the room. The only place a two-foot train will show is as it runs across the Phillips scene and down behind Tuolumne Forks. I squint a lot as the Forneys run past the TF western style Shays. At the end of Tuolumne Forks the two-foot disappears behind the sawmill and remains hidden until it re-emerges at the head of the Phillips trestle.

I have always believed in building my layouts high so that I can still use the area under the layout for workbenches, drawing tables, and spray booths. I also have bookcases, an antique roll top desk, and my typewriter under my layout. The height of the layout is governed by the height of my file cabinets. The photo shows how TF is placed over my main workbench. You can site a small layout over a bookcase, across the head of a bed, or in a wall system and not lose the use of the space under the layout.

This is the last part of my series on Phillips. I have tried to present the methods I use to build scenes. I urge you to try your hand at building a layout or scene. I know I made mistakes on Phillips. I always do, but as I have said before, it is better to build a layout and make mistakes than never to build one because you are afraid of doing it "wrong". There is no wrong or right. So get on with it and please share your models with us through the pages of **GAZETTE**.

# DID YOU MISS THIS ONE?





## O-On$_3$ MARION STEAM SHOVEL

We only ran 200 of this fantastic kit, we hope you got yours. This kit is the best by far of our On$_3$ series, with 300 castings and 148 separate patterns being made, the kit box weighs 2½ lbs. alone. Our shovel may be built as the D & RGW OQ or as a standard gauge model. We hope you got one from your nearest Durango Press dealer.

Look for our next limited production kit in On$_3$ this summer, the D & RGW pile driver OB.

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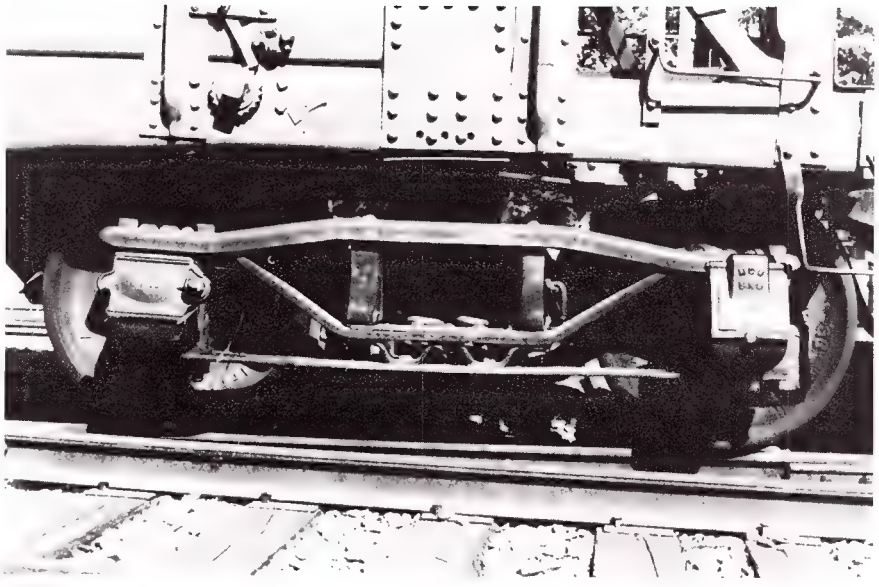
# PRESSED STEEL ORE CARS....



*Above:* Sierra Railway's #163 on display in July, 1980 at the California State Railroad Museum at Sacramento, California. This car is ex-Great Northern #74999.

The Pressed Steel truck on Sierra #163.

These interesting short ore cars started out life working for the Great Northern Railway hauling ore to the Great Lakes ore docks. When newer and larger capacity cars replaced them, they were sold to short line railroads. Some of these cars can still be found today on short lines and one has even been narrow gauged for a tourist line.

The Pressed Steel Car Company was founded in February 1899, when the Schoen Pressed Steel Car Company was reorganized. Mr. C. T. Schoen, the founder, is credited with building one of the first commercial all-steel hopper cars in 1897. In 1900 the Pressed Steel Car Company built numbers of 40-ton and 50-ton ore cars which they sold to several roads. These 22-foot cars were some of the first all steel ore cars to be used for hauling iron ore in the Great Lakes region.

These cars were built to the short 22-foot length in order to replace the old wooden cars used at the ore docks. The docks had pockets at regular, short distances, corresponding to the distance between the hatches of the ore ships.

The Great Northern ore cars were 40-ton cars numbered in the 85000 series. They were later renumbered to the 74000 through 75000 series (odd numbers only). The GN started to dispose of the cars in the early 1920's. The Yosemite Valley Railroad purchased 51 of them for hauling limestone ore between the Yosemite Portland Cement Corporation's quarry and its processing plant at Merced, California. The cars were painted a light grey and numbered 1200 through 1250. When the YV was abandoned in 1945 some of the cars were reportedly sold to the Apache Railway in Arizona. The Amador Central Railroad, a short line running from Ione to Martell, California, also bought two or three cars.

Another California railroad, the Sierra, purchased GN cars. The Sierra bought 80 cars around 1923 and numbered them 100 through 179. They were listed on the ledger book as "Black Jack" Ballast Cars. A few of the cars can still be found on the Sierra today. Three ore cars were used as billboards along highways to advertise the Sierra's steam passenger trains. These steam runs ceased in 1979. One ore car, #163, is on display at the California State Railroad Museum in Sacramento, California. Another ore car was converted into a rock crusher and still another was cut down and used as a flat car (see plan on page 46). The Sierra sold two ore cars to the Westside and Cherry Valley tourist line at Tuolumne where they have been narrow gauged. There is a photo in the now-out-of-print July, 1977 **GAZETTE**.

The Pacific Gas and Electric Company, a large utility in northern California used several of the ex-GN cars during a dam building project on the Pit River in 1921. In order to get to the dam site, a spur was built off the McCloud River Railroad. The cars were lettered for the PG&E, but the line was operated by the McCloud River RR. Apparently after the completion of the dam, the McCloud River RR continued to use these cars on its own line. Another car, still lettered "PG&E 19" is reported to be on the Yreka Western Railroad at Yreka, California.

The drawing is a composite of several of the Sierra cars and shows the car as it appeared in the 1970's. At one time a running board ran all the way around the car and was used by the men unloading the ore. The holes in the side panels were used for knocking loose the frozen ore in the winter. The two lower holes are original while the three upper holes were cut in by the GN. Photos of other cars show four holes, all on the same plane. The car is equipped with New York Air Brakes and has 33 inch wheels.

*Special thanks to Kyle Wyatt, and the California State Railroad Museum for information on the history of these cars.*

# SHORT LINE "BOOMERS"

**by Michael A. Collins**
**Photos by the author**

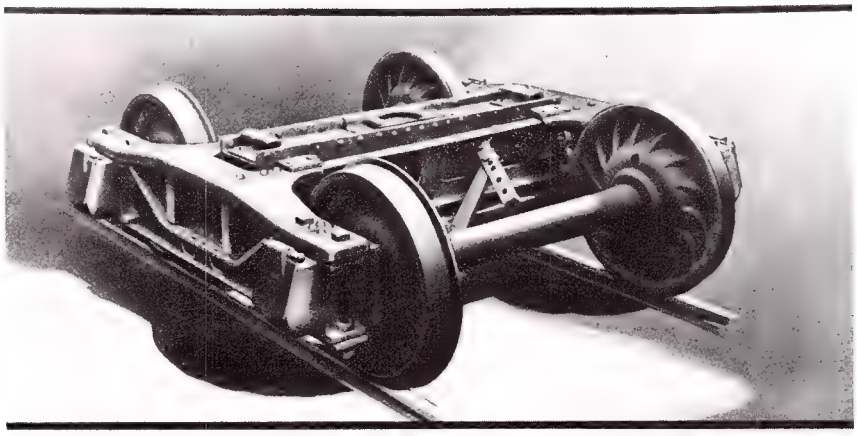
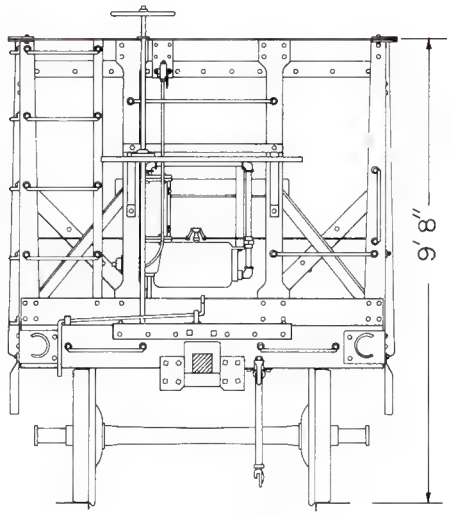


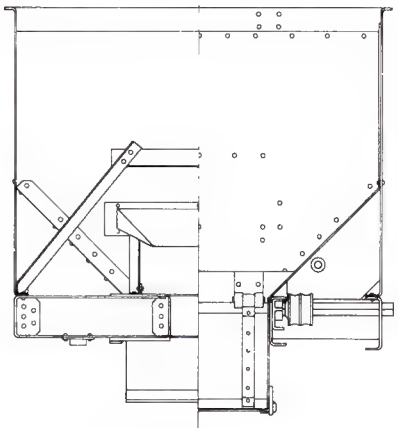
PLATE 156 - Code Word: EWDA

"DIAMOND" TYPE PRESSED STEEL ARCH BAR TRUCK

*Designed and built for all capacity freight cars*

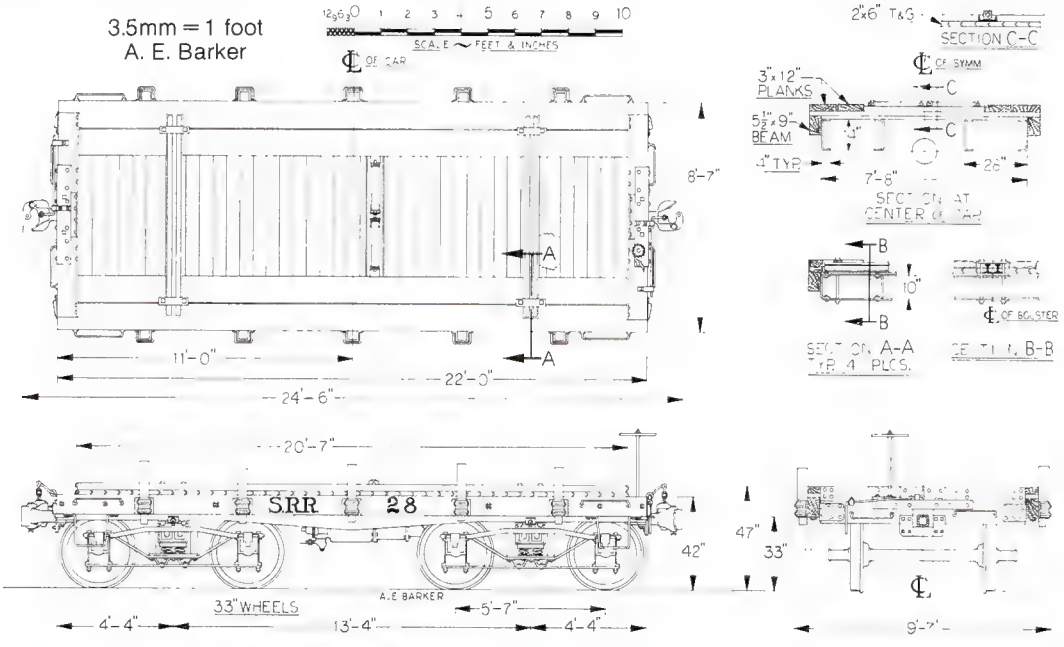
A catalog photograph of a Pressed Steel arch bar truck.



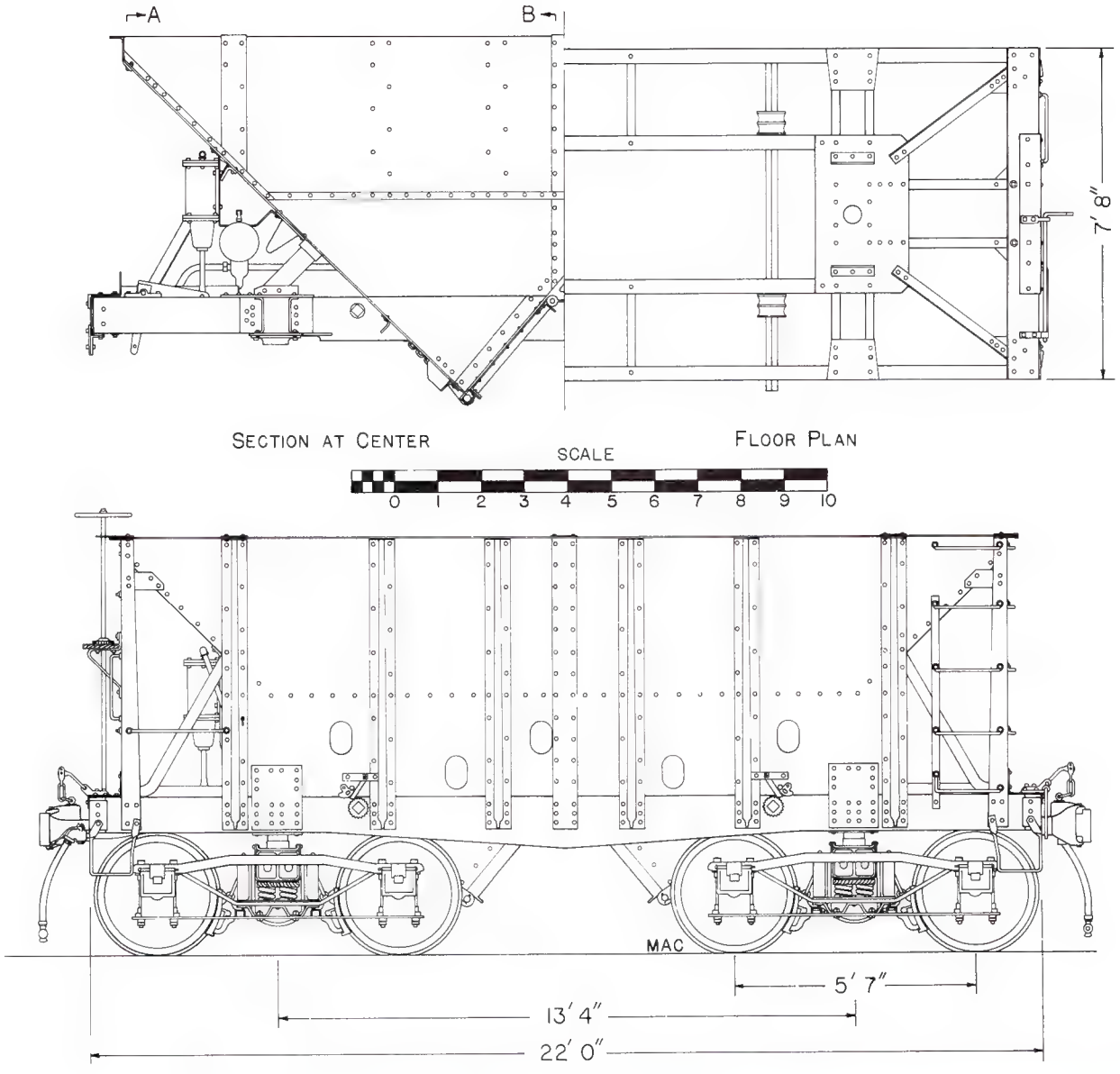
SECTION - A SECTION - B

3.5mm = 1 foot
A. E. Barker



The short flat car (plan above) made from a cut down Pressed Steel ore car. *Photo by Bob Brown.*

A Tonopah & Goldfield hopper car built by ► Pressed Steel.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B
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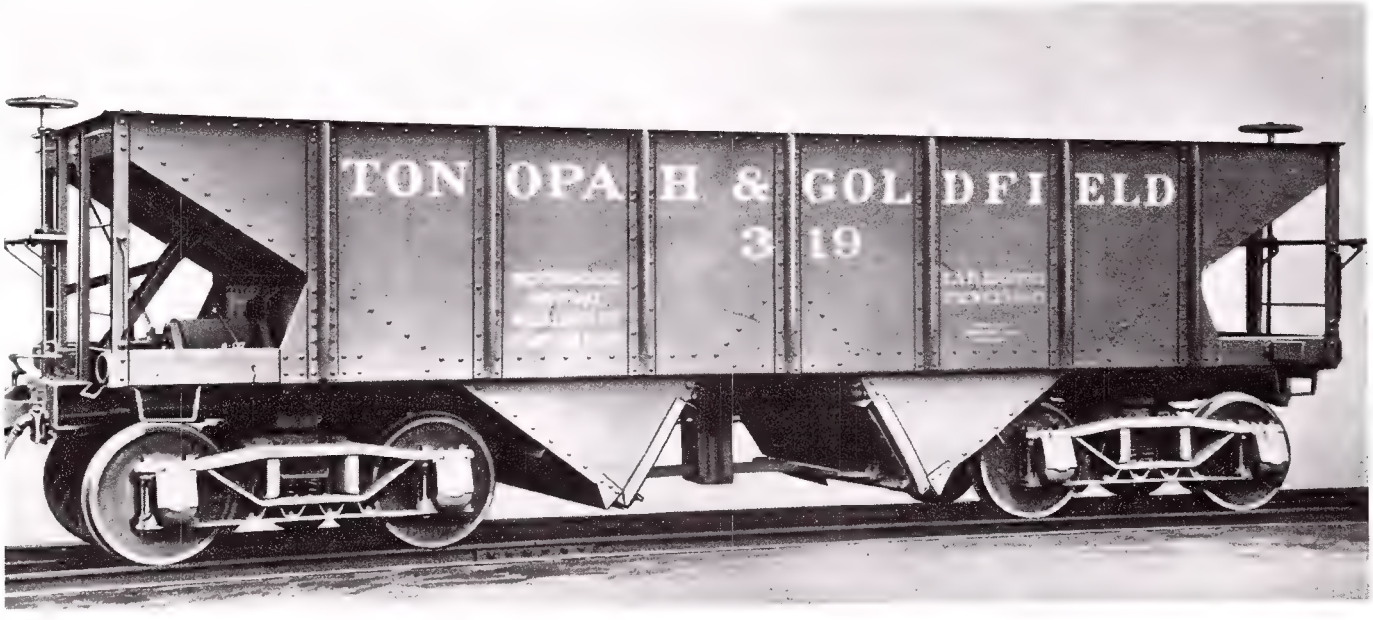
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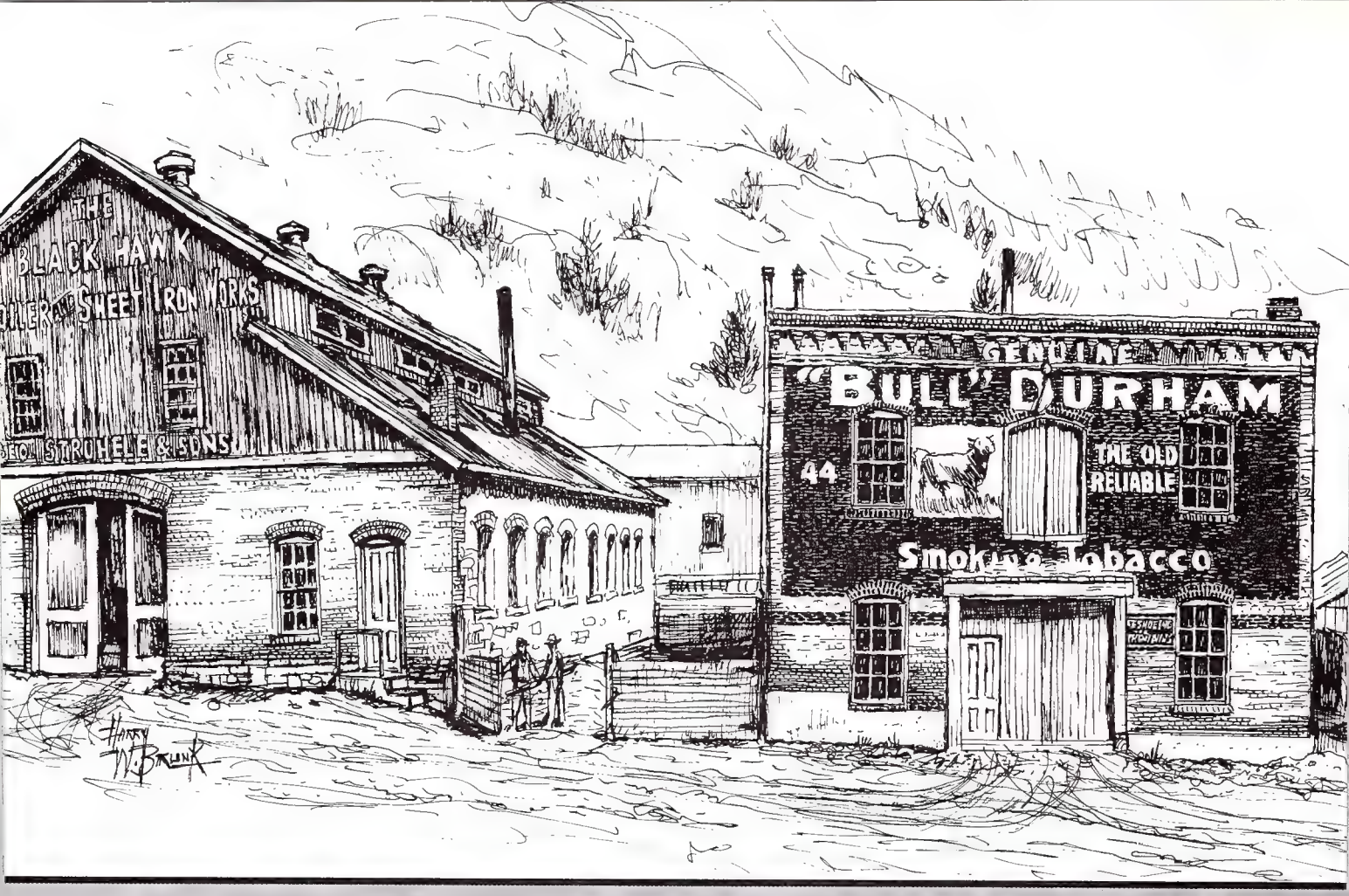



# Up Clear Creek on The Narrow Gauge

## Part 8: The Machine Shop – Blacksmithing & Horseshoeing

**by Harry Brunk**
**Photos by the author**

The Machine Shop has rock side and rear walls and a brick front. And there's a big Bull Durham sign across the brick face. No, they didn't package Bull Durham there–it's just an ad. Bull Durham signs used to dot the countryside at least in the middle and far west. They were usually on the sides or roofs of barns within easy reading distance of a busy highway.

The sign on our Machine Shop was painted before 1910. A photo of the spur built up Main Street to clean up the rubble left by the flood of September, 1910 shows the sign in all its glory. This photo, in the Mining Museum in Central City, also shows an arched main doorway. Some time after 1910 the main doorway was remodeled; the photos, sketches and plans here show the remodeled version.

When "investigating" property such as this Machine Shop, *always* seek permission from the owners or occupants. This way I try to avoid awkward episodes. Most of the buildings in Black Hawk and Central City on the main thoroughfares are shops and businesses. But not all. Some are private residences. Even the owner of an open public business deserves the courtesy of being asked before you putter around his property with tape measure and camera. He also has the right to tell you, "No".

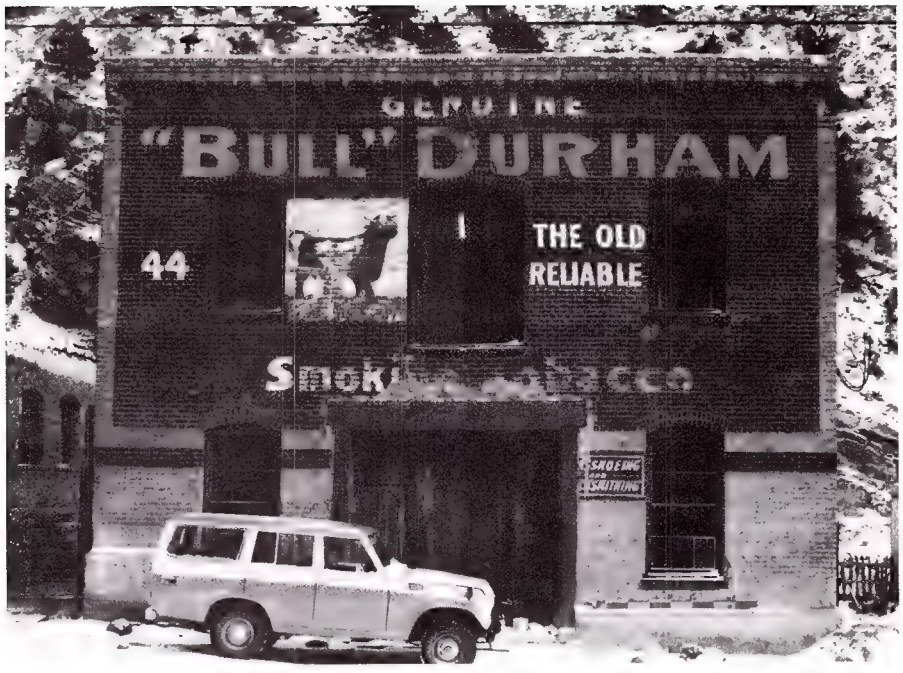
Early one year, I asked and received permission to photograph and measure the former Machine Shop now privately owned. When I returned for additional measurements at a later date, I didn't ask again. A different occupant confronted me; needless to say a little put out by my thoughtless trespassing. The awkward moment ended after my apology and explanation; and in fact, my new acquaintances proved to be quite interested as well as helpful. The occupants told me the stone out house on the northwest is the last stone "convenience" extant in Black Hawk today, though now it is used for coal storage.

The number and location of the many chimneys has changed through the years. The plans show an approximate set up for the middle years of service. Most of the brick chimneys are gone now.

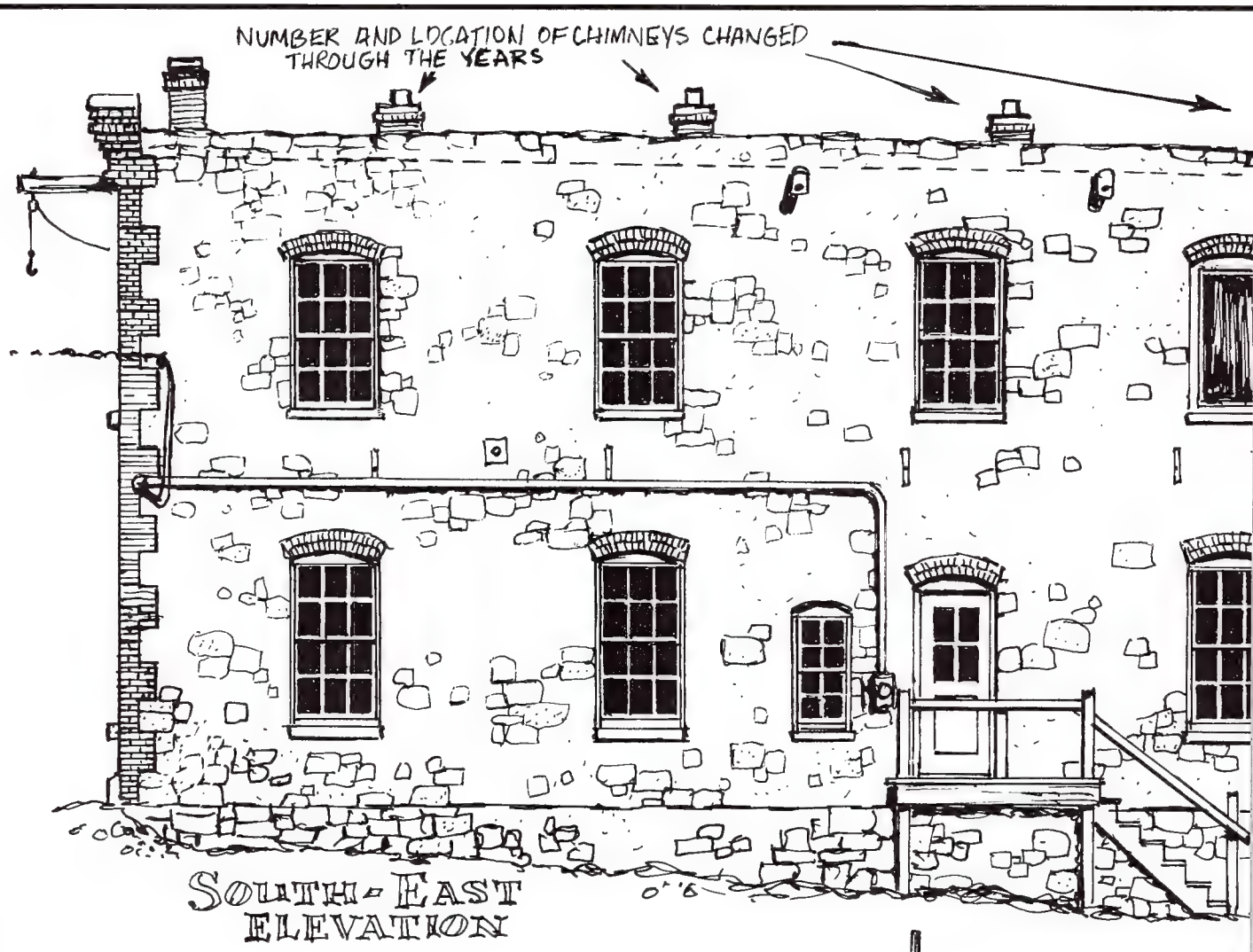
The Bull Durham sign is painted directly on the bricks of the front. All lettering is white on the black panel, with the exception of "BULL DURHAM" which is reefer yellow. The black paint along the courses where "GENUINE" is lettered at the top, is beginning to fade as seen in the photos and sketch. The smaller black panel to the right of the front doors is lettered "HORSE-SHOEING and BLACKSMITHING" in white, though the left edge of the letters are cut off by the timber door frame. The painting of the bull is in full color, with a pale blue sky and a dark red and white bull standing in green grass.

The front of my Machine Shop on the UC&N can't be seen, so it sports no "Bull" sign. This regrettable loss of visual interest couldn't be remedied much as I would have liked.

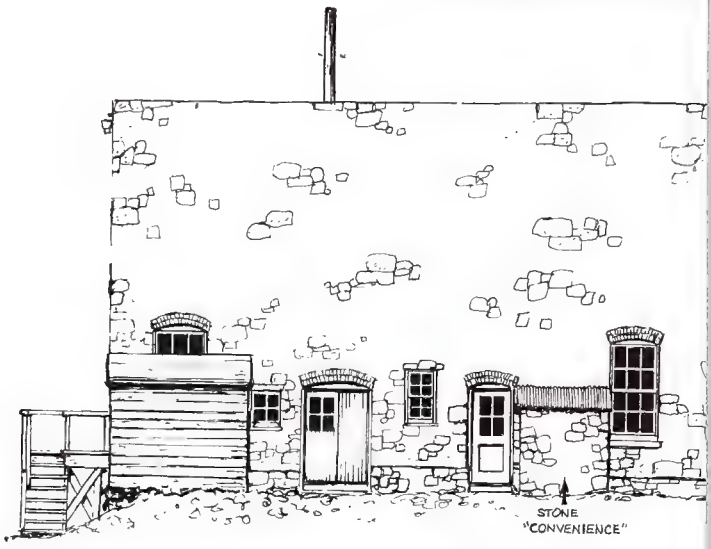
The "Bull" Durham front of the Machine Shop dating from at least 1910.

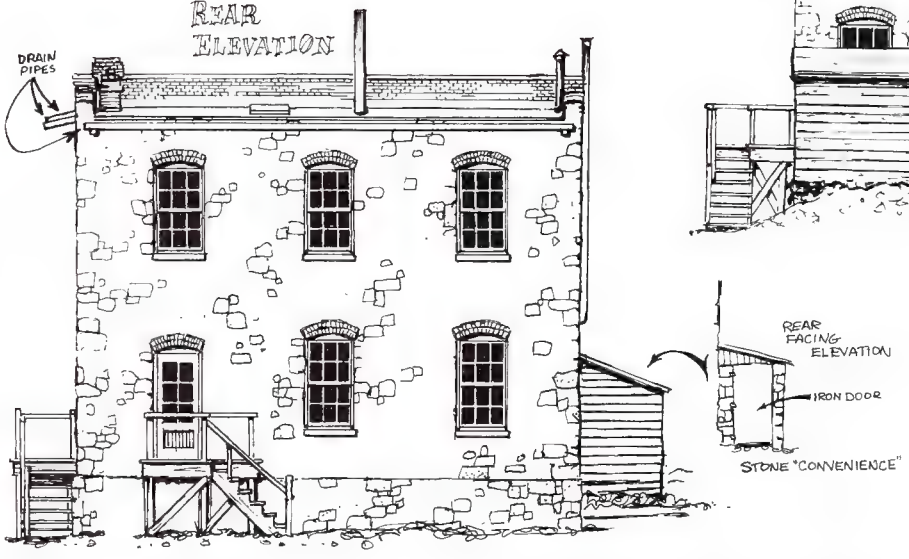



Black Hawk around 1880. This view is looking west toward Gregory Gulch in the hazy center background. The machine shop can be seen in the center of the photo. The neophyte Boiler Works is just beyond. The station is out of the picture beyond to the lower left hand corner. The streaks across the tracks in the center are patched cracks in the original glass plate. *Photo, courtesy Harry Black, President, Gilpin County Bank. Copy by Jim Savage.*


NUMBER AND LOCATION OF CHIMNEYS CHANGED THROUGH THE YEARS
SOUTH-EAST ELEVATION

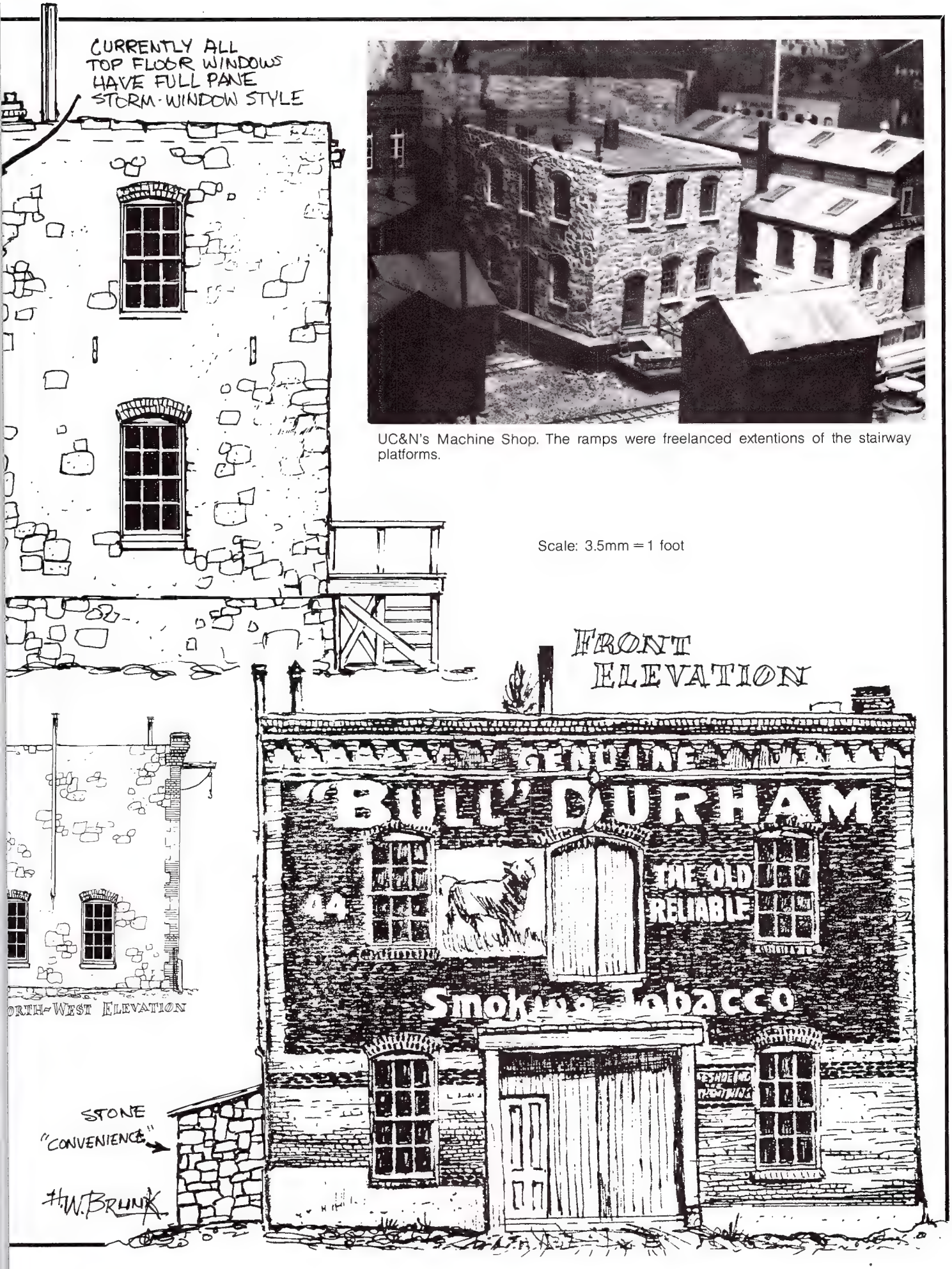
Scale: ½ HO

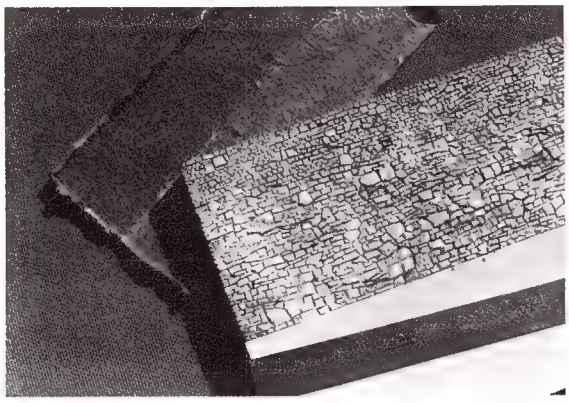

STONE "CONVENIENCE"


REAR ELEVATION
DRAIN PIPES


REAR FACING ELEVATION
IRON DOOR
STONE "CONVENIENCE"

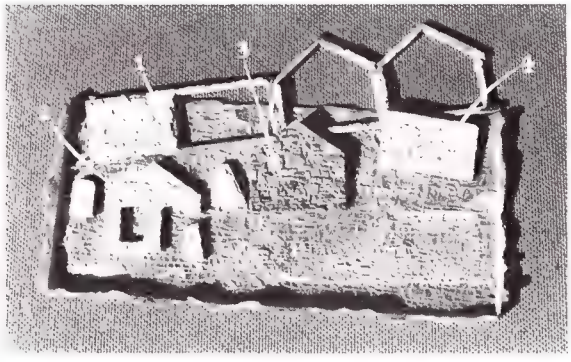
UC&N's Machine Shop. The ramps were freelanced extentions of the stairway platforms.



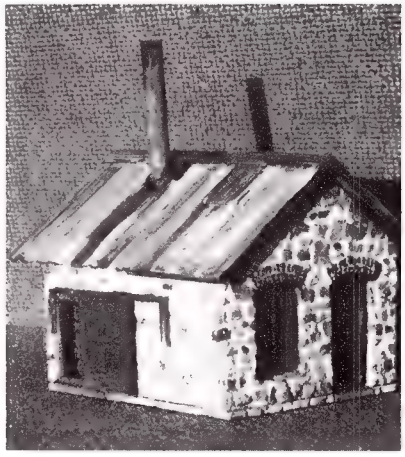


The linoleum block master for the walls and the latex mold produced from it.

A form placed in the latex wall mold. The form is made of balsa wood strips as are the door and window "plugs".



A form with the Hydrocal wall section yet to be removed. 2: A Hydrocal casting with the window and door plugs removed and the flash cleaned off. (The casting has broken but is easily repaired). 3: A wall section with primary coloring. 4: A wall section with a final Hydrocal "wash" providing the mortar fill and lightening the tone of the rock color, this wall is ready for assembly.



A completed building. The broken right hand front wall was repaired and the break is not detectable. This building will be a pump house for the UC&N's Black Hawk water tank. A brick mold is used instead of this stone mold for the brick buildings.

As were the depot and Boiler Works, the Machine Shop is hydrocal poured in forms placed in my rock wall latex mold. This mold's master was carved in a linoleum block many years ago–scaled from the dimensions and shapes of the rocks in the walls of the Pallisades near Alpine Tunnel on the South Park line. I've used the mold many times on the Clear Creek Line. Used in small sections to represent rock retaining walls on the prototype, there is no equal since the construction was the same here as near Alpine. The master represents unmortared rock, and needs additional work when used to represent the walls of buildings.

The photos show how forms are used in the mold to cast walls. When molded parts break I use contact cement on the broken edges. Mate them firmly, avoid chipping the broken edges and you'll have an invisible and firm repair. The Black Hawk depot front was in no less than five pieces when the wood form was removed from the Hydrocal. You can't see any seams or cracks now, in fact I can't find them.

I used yellow ochre, orange, burnt sienna, and white acrylic paints, keeping the colors somewhat darker than the prototype. When the paint was set, a thin mix of Hydrocal was "washed" over the rock face, nearly filling many of the deep crevices between the rocks. This also acted as a lightening coat over the darker colors of the rock. A putty knife was used at times to scrape excess plaster from just the face of the rocks. When cured, this final plaster "wash" produced a wall with a color and texture rivaling the prototype. Some rocks were partially or totally covered with mortar just as the original.

My walls were epoxied at the corners after the fitting of doors and windows. Additional repairs and "plastic surgery" in plaster and paint were necessary at the corners.

Linoleum blocks are nothing more than a thick asphalt linoleum mated to plywood. They are available in various sizes from better stocked art supply or arts and crafts stores. They were originally used to cut patterns and forms for ink block printing. They are easily carved and textured with X-acto knives, to form brick or rock patterns which are miniatures of the original. Extra care and time isn't wasted here, for when your latex or silicone rubber mold is ready, you can create an endless quantity of duplicates to fill many needs. My "Pallisade" pattern is a good case in point. I still haven't modeled the Pallisades, but other uses made it a good investment of time.

Before looking at other buildings in Black Hawk, we'll look at C&S #20. This small combination coach and baggage car is displayed at Central City. Plans and photos will be in Part 9 of "Up Clear Creek on the Narrow Gauge" in the next **GAZETTE**.

**by Peter Tuttle**
**Photos by the author**

Welcome to the Coach Works, an occasional series for newcomers to HOn3 modelbuilding.

I've assembled two E&B Valley Railroad Company passenger car kits for this issue. I chose the Denver & Rio Grande vestibule coach, and the open platform baggage car.

The E&B kit instructions are so complete that there is little I can add to them. You'll notice I detailed my cars a bit to make each one more distinctive.

It takes me 10-15 hours to assemble each E&B Valley passenger car kit. I have discovered two techniques that make construction of these kits really easy.

First, I use the new Satellite City Super-T Hot Stuff as an adhesive and second, I brace the roofs with ⅛ inch square pieces of stripwood.

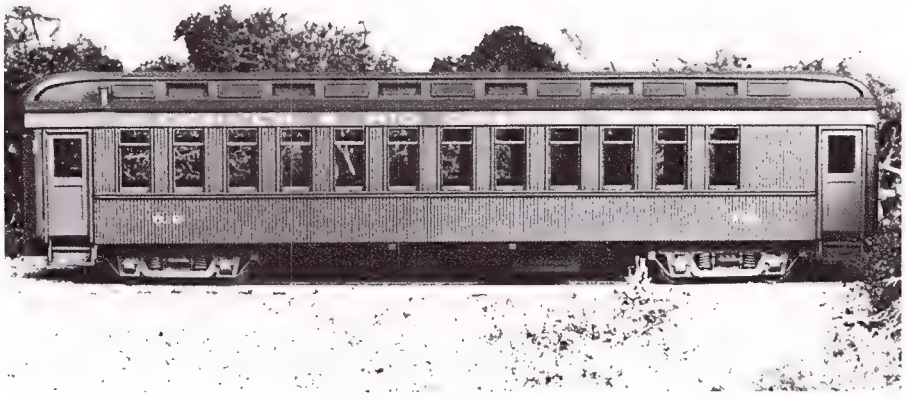
I prefer Super-T to ordinary Hot Stuff because its delayed setting time (10-25 seconds) allows for accurate positioning of the parts to be joined, and because, with its filleting action, joints need not be perfect. Also, porous materials, such as wood, can be glued securely to plastic. This is something that, epoxy notwithstanding, has never before been easy.

The strip-wood bracing makes the roofs perfectly straight, insuring a good fit with the clerestory inserts and car sides, and results in a very clean looking model.

I cut three pieces of ⅛ inch square stripwood for each roof. One piece goes down the inside middle of the roof (scrape away the "E&B Valley RR. Co." raised lettering). The other pieces go right along the edge of the area recessed for the clerestory insert.

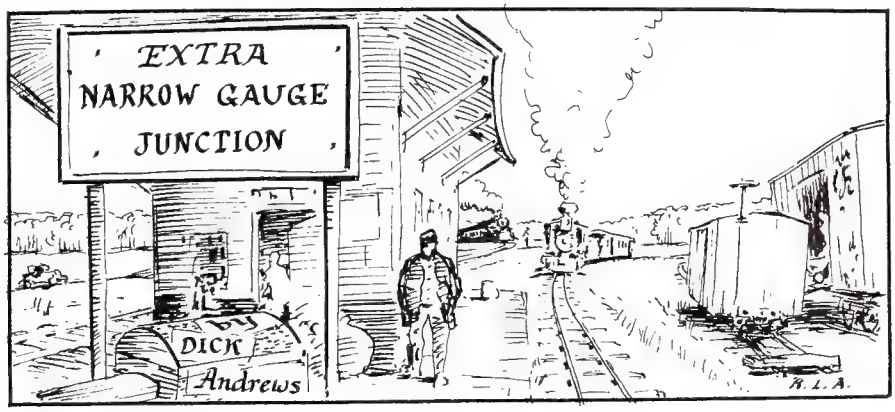
The inserts can then be glued directly to the wood. This does block the clerestory windows. If you wish, it's possible to carve out crescents from the wood to allow light behind the windows. Do the carving before gluing the wood to the roof.

Following an idea developed by Bob Hayden I substituted a .040 × .100 inch strip of Evergreen Scale Models styrene for the fascia strip provided with the kits. I felt the open platform roof looked best with the fascia cut flush with the car end, and with the quarter rounds cut short to fit under the fascia strip.



I airbrushed my cars with Floquil colors, decaled them with the Thinfilm HOn3 D&RGW passenger gold set, and oversprayed them with a mixture of about half Dio-Sol and half Floquil Grime.

I am really pleased with my E&B passenger cars. I've had non-narrow gauge friends tap the cars, to prove to themselves they were plastic, not brass. But then it would be hard to get detailing as crisp as that of the E&B sides in anything but plastic.

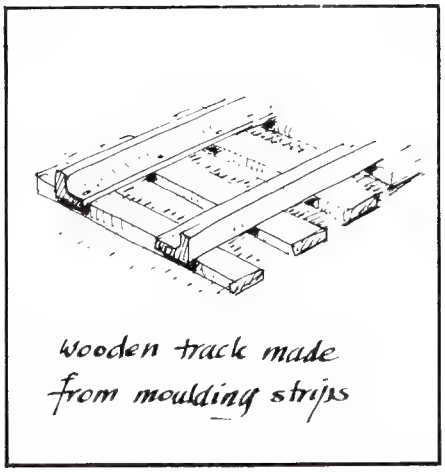



# ... in an old attic.

**by Dick Andrews**

Many years ago we visited at an old family home in northern Maine. Of the various interesting things to see in so old a home, the books that had been collected by the family over so many generations had unique fascination. The old family bible had been carried "down Maine" from Massachusetts before Maine had become a separate state in 1820. And there were many other volumes; one that I particularly delighted in was a boys' handy book dated 1867 with an article on model railroading in it. Last summer I revisited to see about reproducing this item for **GAZETTE**. Alas, the books had been sold and this item was not to be found, so what follows is my memory of it.

The commercially available miniature trains of the day were of course simple toy forms cast from iron in halves and held together by stove bolts. Cast-on lugs retained the rod axles for cast wheels without flanges, as these were pull-toys for the floor. Some stamped tin items were also available. The prototypes were somewhat simplified. The standard American locomotive type of the day, the 4-4-0, came through as a sort of 2-2-0, perhaps without a tender. The double-truck cars that had come into use in America more quickly than in Europe, in miniature form were short four-wheelers. But then, every real American kid knew what trains looked like sounded like, and smelled like, and how they shook the very ground under one's feet.



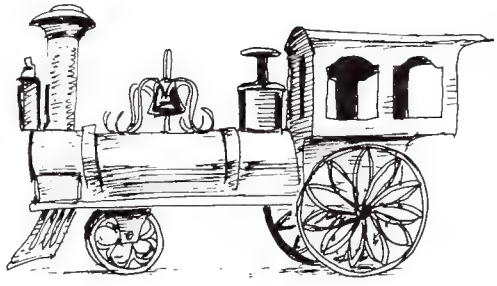
Wooden track made from moulding strips

The 1867 article presented a leap forward in miniature railroad technology–track. In that time the mills were running out light moldings from beautifully straight-grained woods, such moldings used as rails provided the needed flanges to retain the wheels on the track. Light lattice stock, cut in short lengths was nailed on for cross ties. I do not recall curves or turnouts; perhaps this was done by angling short straights. Possibly it was not mentioned.

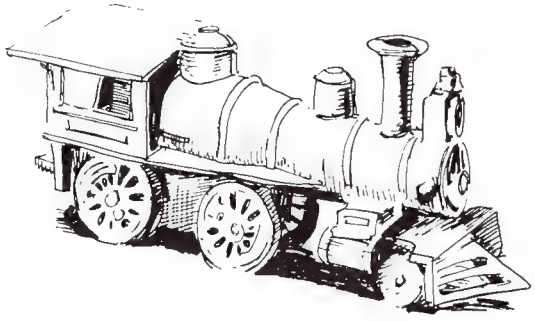
The article stated that before one starts making track, one must decide what gauge one is working in. Yes, one must choose between broad gauge and narrow gauge, it said. Since it would be several years yet before General William Palmer started building his light little pioneer three-footer over the prairie south from Denver to Colorado Springs, this reference to "narrow gauge" gave me pause.

Then I remembered that 1867 was in the era of the great broad gauges: the six-foot track of the Erie; the five-foot six-inch track of the Grand Trunk; the five foot even of the solid South and California; and overseas other broad gauges up to Brunel's staggering seven-foot quarter-inch Great Western Railway. In those days, "narrow gauge" meant four feet eight and one-half inches between the rails.

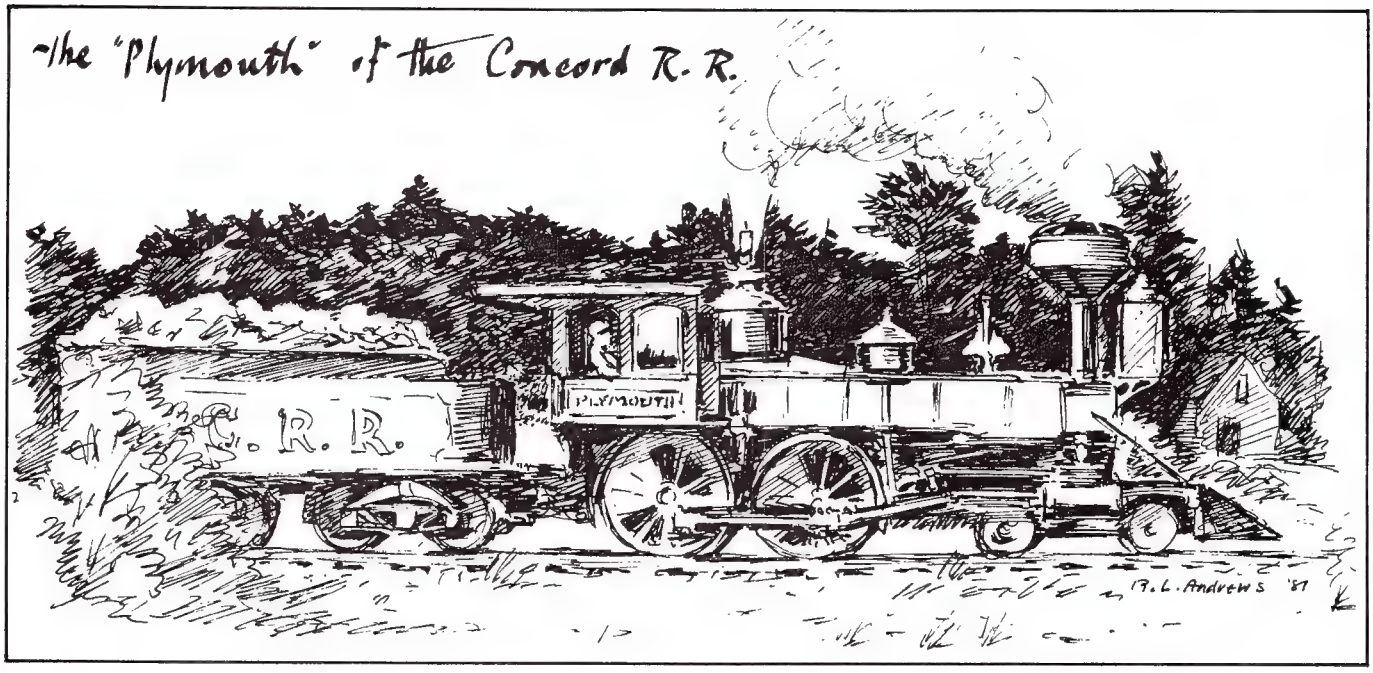
The cause of this variety of gauges early on was simple enough. Each major port city on the East Coast wanted to ensure that all the carloads on the railroad it was paying for, came to its docks and warehouses and not any other. Hence New York's involvement with a six footer, while Portland, Maine, used five foot six-inch track to funnel Quebec Province's



This early day stamped tin loco may have run on flower power, judging by the driverwheel style!



Cast Iron Loco in the Author's Collection. Seven inches long. Its horizontal "cow catcher" slots suggest P.R.R. influence. Note extended front end and cap stack.




winter wheat to its ice-free docks. Charleston, South Carolina, bet on five feet, and Boston, Mass., went with "narrow gauge" as did a few other points.

Other world broad gauges still in use are the five-foot three-inch of Ireland, the five-foot six-inch of Spain and Portugal and also Brazil and other points in South America, as well as India. There is also some five-foot three-inch in Australia. However President Lincoln settled on "narrow gauge" for the track width of the first American transcontinental line, and after that the days of the broad gauges were numbered. The South converted in the 1880's as did the Erie and others. There are a few odd remnants of off-gauge lines. The Mt. Washington Cog RR is still, I believe, four feet seven and one-half inch gauge and of course that shortest of all Atlantic to Pacific transcontinentals, the Panama RR, remains at the Southern antebellum standard of five feet.

There is one other great system: the five-foot gauge of Russia. If our South lost one war, it may have well won another and greater conflict. A Southerner from the U.S.A. built the Czar's first railroad from St. Petersburg to Moscow, and naturally used a five-foot width. While Hitler maybe could have won a short war with gas motors and road systems, he could not manage a long one without the railroads. He could not use the Russian equipment because they had withdrawn it and his own was the wrong gauge. This may just have tipped the balance in WW II. The Southerner who gave the Russians their five-foot gauge was Whistler's father, and he certainly deserves his portrait done as well.

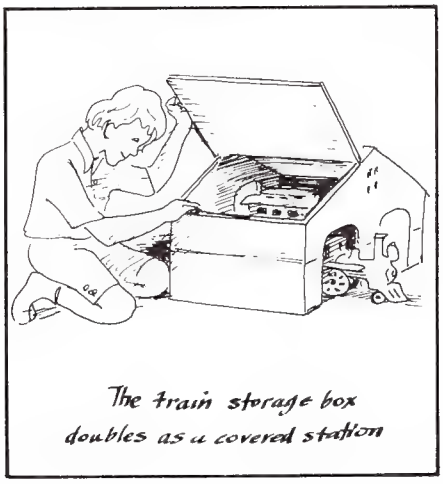
All this has emphasized the differences between various rail lines of the 1850-70 period in the U.S.A. However in most other ways they were very much alike. They all made much use of the 4-4-0. Indeed some lines had no other type of locomotive. Despite variant gauges, these 4-4-0's were much of a size. Number 210 of the Erie line in 1855, built by the New Jersey Locomotive & Machine Company, weighted 34 tons with 20 tons on the drivers. Thus her unit axle load maximum was ten tons. She had 17 × 24 cylinders, and 60 inch drivers. In 1862 Danforth, Cooke built #16 for the six-foot gauge Atlantic & Great Western Railway. She had a 31 ton weight and slightly smaller cylinders and drivers, a 54 inch diameter driver and 22 inch stroke giving her an edge on freight. In 1870 the Pittsburgh, Fort Wayne & Chicago RR built a wood burning passenger locomotive in its own shops: 32½ tons weight with no more than 10½ tons on any axle. The cylinders were 16 × 24 and drivers 66 inch diameter. In 1873 the Grant Works built a 4-4-0, road name not given, and again total weight was not over 31 tons so that the ten-ton unit maximum held; the cylinders were 16 × 24 inches and the drivers were 61 inches in diameter. The rigid wheelbase (drivers) was 8 feet and the total engine wheelbase was 21 feet 9 inches. Thus in quite a span of years and on various track widths "narrow" and broad, these locomotives were much of a size, and would not overload a 60 pound rail . . . even at quite high speeds.

The basic "gimmick" of the 4-4-0 is its long nose. A third of the weight of the locomotive is on the four-wheel center-pin truck which is well out in front of the drivers. The leverage or "handle" given to the four-wheel guiding truck is considerable and the truck itself soon had a self-centering linkage on the bolster. The two driving axles were equalized and thus one had a near ideal three-point suspension. Main rods were light and drive rods were inside on the pins next to the wheel. Boilers were usually four-foot diameter at the waist and thus well down between the drivers, with the firebox deep and low to the ground. Accessibility of parts (a serious problem on many heavy locomotives of the later big steam era) was easy on these machines. And of course their very reliable tracking qualities also made them easy on the track.

The one flaw of the 4-4-0 was that its power could not easily be increased except double-heading. On the light but regular public service runs desired by the public on most rail lines, it was still the ideal type and on short lines here and there it was to be found working right through the 1930's. But where the railroad system was moving heavy volumes of freight or long and heavy steel passenger cars, a much larger steam locomotive was required with the boiler above the drivers and the firebox overhanging behind them. Designers then began copying our small-gauge locomotives. The Manchester & Oneida short line in Iowa used 4-4-0's until no more could be had. A 2-6-0 was brought in and it promptly roughed up the track.

On a memorable June day in 1937 I rode in open-ended coaches behind a fine old 4-4-0 from Claremont Junction to Concord, New Hampshire. There in the big train shed stood my connection to Sanbornton: another 4-4-0 with another two-car train of open-enders. I was chatting with the engineer of the train I'd come in on, when I noticed my Sanbornton train simply flowing away silently. I made a dash for it and just caught that last set of steps. A lacey little iron gate at the top of them was shut but I just threw a leg over it and was aboard.

Train sheds and other covered station types were on the scene for a long time, and here our 1867 boy's article wound up with quite a practical idea. A covered wooden station was sketched and the suggestion was made of using such a structure for your miniature railway; it could then hold the track and cars when they were put away for the night. One



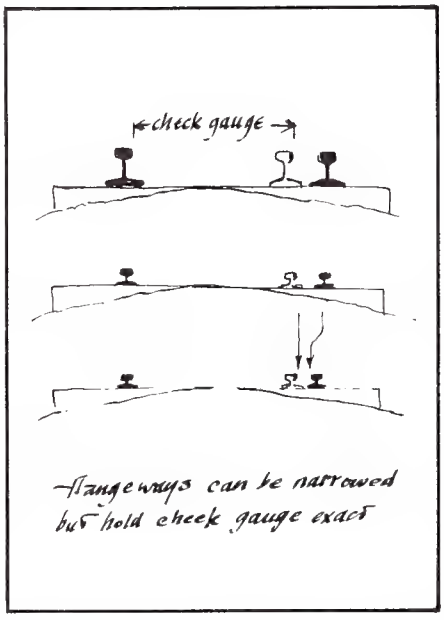
The train storage box doubles as a covered station

panel of the roof would lift and permit easy stowage.

The 1850's to 1870's were very much the era of the beautifully named clipper sailing ships. It was only natural that these wonderful steam locomotives and elegant passenger cars had names. Thus locomotives were often named for prominent individuals–directors of the company–or other notables. Then there were names such as "Phantom", "Rapid", "Queen City", "Hiawatha", and "President". Replete with gleaming brass, Russian iron builder-jackets, handsome colors lined out and monogrammed, and sometimes even portraits or landscapes–they were objects of beauty and joy. Often the crew "owned" its engine and ran no other. Of course they were carefully put away at night or when not in service, and naturally each steed had its own engine house stall. Engines were not run in head to the back wall like cows at milking time; they were backed in heading out like a thoroughbred in its stall. William Mason was known for his particularly handsome 4-4-0's, and his friend Matthias Forney (who originated that famous 4-4-0 adaptation) described them as "melodies cast and wrought in metals". Mason himself ruefully remarked that "I tell my friends that I got up locomotives for fun, but that it was the most expensive fun I ever had. I make just enough money from my cotton mill machinery to make up the losses on locomotives."

All in all, it sure sounds as if the rail fan movement started long before the 1930's.

The Civil War era railroad is still a frontier of model railroading. Of course fine work was done by E. P. Alexander and M. D. Thornburgh, both in "O" scale, many years ago. Alexander wrote a good bit on these prototypes for model railroading, and Thornburgh was known for his simple modeling methods in creating early-day B&O locos. The practical problem is that the overscale margins of model railroad wheel contours and flangeways do not show up well with these light lean little locomotives. They look like little girls




Flangeways can be narrowed but hold check gauge exact

wearing huge heavy gumboots. One can of course go precisely to scale as in ¼AAR. Or there is the possibility of modifying "O" by the reduction of flangeways, holding to standard check gauge, and of course, flanges. In this connection it is interesting to note that that "standard of all standard" railroads–he Pennsy, was not four-foot eight and one-half inch gauge until about 1903. It was four-feet nine inches. It used standard four-foot seven-inch check gauge and simply used a two-inch flangeway and otherwise eased passage of rigid five-coupled drag locomotives in the days before controlled lateral play of driving axle journals.

In my column in the November/December 1980 issue of the **GAZETTE** there were some photos of the three-foot gauge tramway at the Camas, Wash., plant of the Crown-Zellerbach Paper Company. These had been kindly sent us by John Cummings, who mentioned that the line had been written up in **PACIFIC NEWS** some fifteen years ago. We asked for more information on the line and Gil Hulin, the author of the **PACIFIC NEWS** piece, has responded with a copy of it. Thank you, Gil. That is real support. Briefly, Gil believes that the line is still operating as he saw it five years ago. It is some 90 years old, once mule power, and has been juice for seventy years. The wire, fourteen feet above rail head, is shot hot with 220 volts DC. (Did I get that right, juicers?) There have been three nine-ton locomotives by BLW/Westinghouse and four by GE, the heaviest at 13 tons. The line is about 8 miles long with 14 shipping points. It works 24 hours a day, seven days a week. Three crews work the day shift, two the swing shift, and one the graveyard. Each crew consists of a motorman and brakeman from the shipping department. Ninety-one flat cars haul raw materials in and paper out to ship docks, except for six with low sides that haul limestone or rubbish. A dozen hoppers bring in sulphur for the acid process.

Many thanks again to John and to Gil for this look at a unique tramway. Next time we'll have a look at how Civil War "narrow gauge" got scaled down to the narrow gauge we know.

Dick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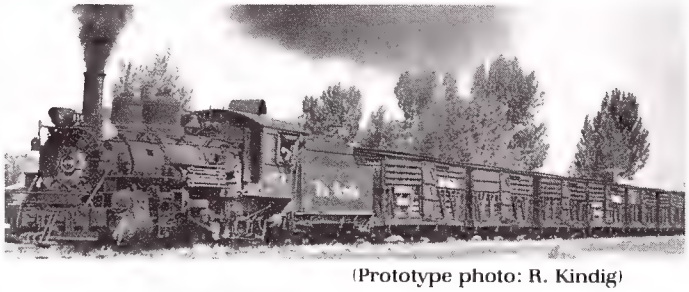

(Prototype photo: R. Kindig)

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# MIDLAND TERMINAL BOX CARS FOR LIME SERVICE

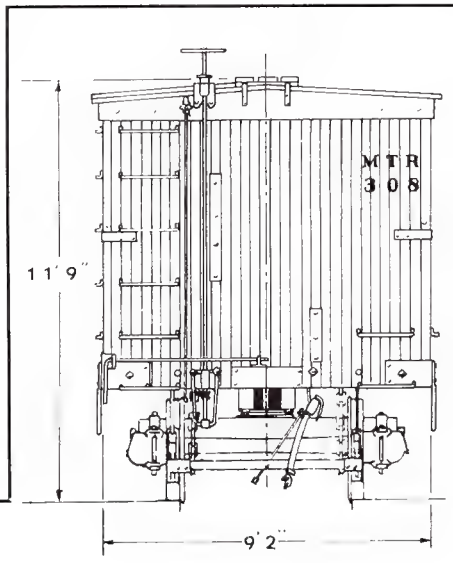
**by Arthur Wallace**
**Photos by the author**

Colorado's Golden Cycle Corporation indeed possessed a "Golden Cycle". This Corporation owned the majority of the mines in the Cripple Creek gold mining district, a refining mill 53 miles away in Colorado Springs, and the connecting Midland Terminal Railroad which handled all shipments. There were other satellite operations along the main line; lime was one of them.

The cyanide process used by the Golden Cycle Mill made use of large quantities of lime. A company-owned limestone quarry located a short distance away provided limestone rock for the kiln, which furnished lime in bulk form. The lime was loaded into MTR box cars both for temporary storage and shipment to the mill. Special care is necessary when storing and shipping lime. The powdered lime had to be kept dry and in a "tight" car. The wood interior surfaces of the cars had to be protected from the caustic lime and the heat it could generate. The MTR devised a simple solution using their surplus of Colorado Midland box cars. They placed small openings high on the car walls and sheathed the insides with metal. It is not clear whether the small openings were used for ventilating the cars, or were used for loading, as well. The white deposits above all the openings suggest the passage of many clouds of lime dust. Certainly, loading a wheelbarrow by shovel inside "could be injurious to your health", without some form of ventilation.

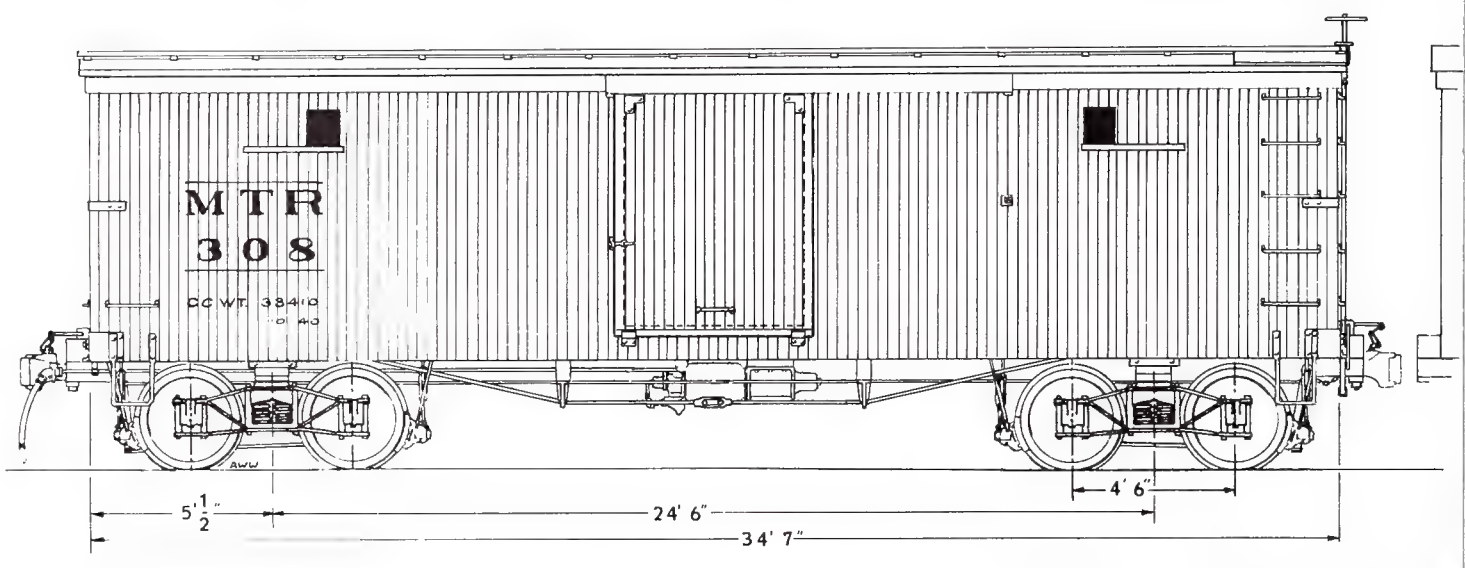
As a beginning modelbuilder, I had an opportunity to make detailed measurements of MTR #308 in 1948. I used these, along with photographs, publications about the Midland Terminal and the Colorado Midland, and the recollections of old timers in the preparation of this article.

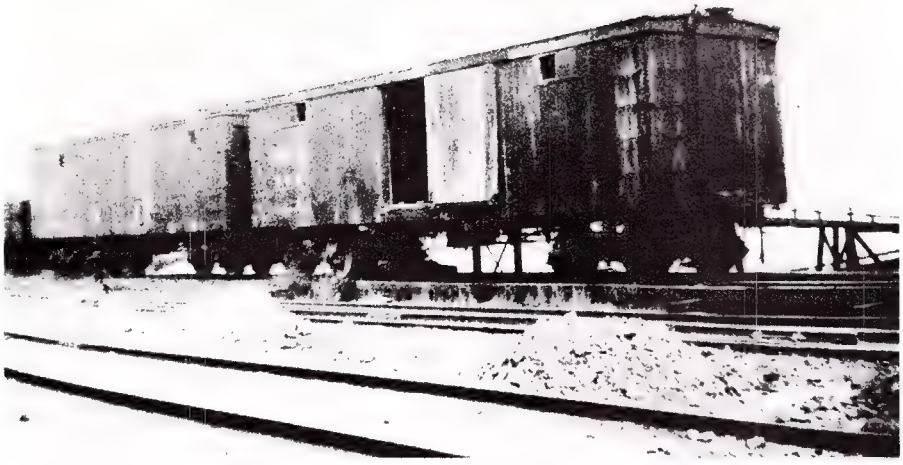
Midland Terminal Railroad box car #308 had her origin in a group (CM #5901-6000) purchased from the American Car & Foundry Company in 1901, at the cost of $653.70 each. Of thirty ton capacity, she weighed about half that much (30,200 lb.). She was among the 23



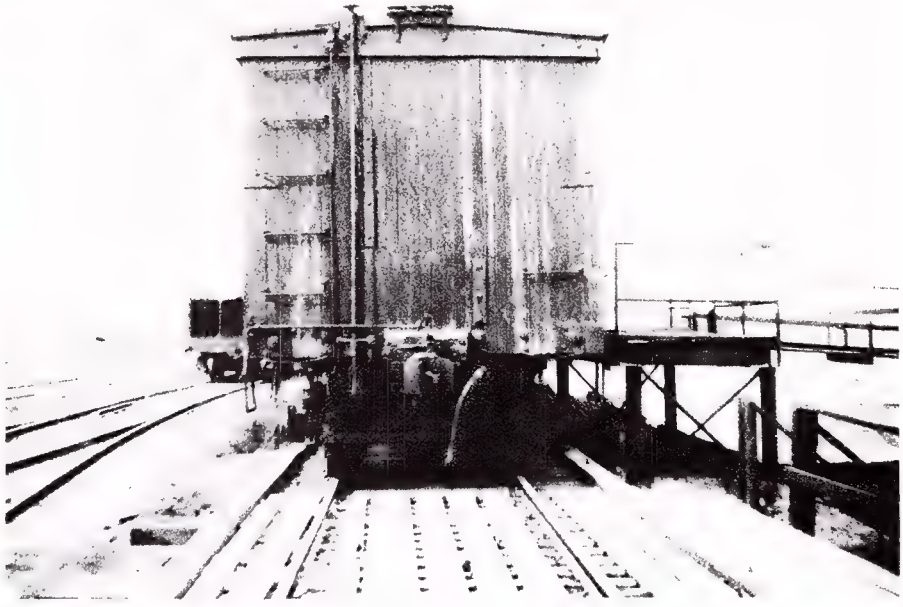

Scale: 3/16 inch = 1 foot

Drawn by Art Wallace





Midland Terminal's cars 715 and 308 at the unloading ramp of the Golden Cycle Mill. The off-center flush door of the far car betrays her origin as a Colorado Midland Hanrahan Refrigerator. Location of the internal wall braces evidently forced a slight relocation of the vent openings.

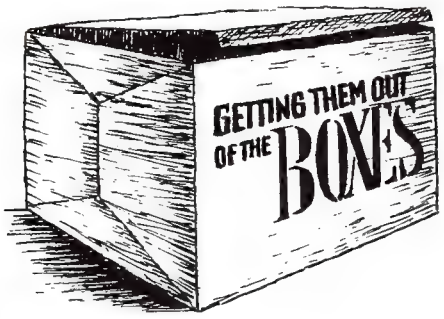


Vertical reinforcing straps suggest that a loose load may have damaged some of the wall studs during 47 years of active service. Note the low height of the guard rail on the unloading ramp, suitable for wheelbarrows.

which remained of the original order, when purchased by the Midland Terminal in 1921. In 1948, her weight had grown to 33,410. The ton and a half gain was due to the sheathing and other modifications made during the long, active life. She was equipped with "Thielsen style" trucks which were not unusual on the old CM, but were not permitted off of the MTR rails because of the interchange rules. A good portion of the old MTR rolling stock was equipped with a more universal Colorado Midland trademark, the outside brake beam. I gained some insight into these, and other CM operational problems during a visit with Mr. Al Levin, who had served as a CM brakeman in the Leadville area. Al spoke of being "jittery" of the job of "dropping the brakes" in the wintertime. It seems that those cars having outside brakes were desirable, since more of them could be hauled over the pass. However, they had to have their brake linkage disconnected for their climb to the summit. Evidently the shoes' occasional drag on the wheels slowed things up by making work harder on the locomotives. The brakeman got the job of "dropping the brakes" on each truck with outside beams. This allowed the beams to hang free on their hangers, the shoes clearing the wheels by an inch or more. This was done at the bottom of the hill (Arkansas Junction on Al's run), followed by hooking them all up again, and testing at the top. The descent down the other side into Basalt demanded full control of the train, which was considered a "runaway" if it exceeded 4 miles per hour. The hook-up job at Ivanhoe at the top of the hill was what gave Al the "jitters". The surface of the snow was halfway up to the roof of the box cars much of the year. Because of the deep walls of snow, the brakeman's only access to those trucks was through the confined space between the car ends. There is evidence that the CM paid heavily in compensation for loss of limbs resulting from "accidental train movements".

I suspect that the CM's decision to purchase rolling stock equipped with short wheelbase trucks equipped with outside brake beams was based on the ease with which the brakes could be "dropped" on the roads stiff uphill grades. The longer wheelbase trucks with inside mounted brakes were readily available, and in common use in the 1880's.

You can get a kit with the general proportions of MTR #308 in HO gauge from LaBelle (HO-40 Soo Line, HO-45 Toledo & Western), and Central Valley (B97 CM Box). These require some modification. Roundhouse (3063 Colorado Midland) requires a bit more. Getting the trucks correct is more work. Kemtron's #7457 Thielsen truck, in HOn3 has the correct axle spacing; however, it needs a bolster to suit your HO gauge wheels and dummy springs with bolster ends at the sides. Splitting Kemtron's #6063 HOn3 brake beams and spreading them to fit the wheels can be made easier by mounting both on a single rectangular sheet of styrene, hung from the bolster, between the wheels, and below the axles.




# Assembling the Precision Scale Silver City Shay in On3

by Tom Jones

This is the first brass kit I've had the pleasure to build but definitely not the last. When I changed from HO to O and On3, I decided to have quality if not quantity in my motive power. This engine certainly fills the bill when it comes to quality.

The prototype for this Shay was the 24-inch gauge Silver City, Pinos Altos & Mongollon Railroad #3 and #4, constructed in 1906–1907. This kit is available in both 24-inch and 36-inch gauge and is typical of Shays of the period and a good start for any of a hundred prototypes.

This kit has castings of superb quality and its engineering is excellent. The instructions are well written, although some experience in craftsman type kit construction is taken for granted. The ten pages of instructions are typed on both sides of the page and include templates, diagrams and a page of photos of sub-assemblies and the completed model. The cylinder assembly is covered in two pages of instructions from The Back Shop.

The instructions begin with an introduction to the prototype and the model which describes the kit generally. Next is a tool inventory which includes a description of tools that will be needed and those that will be helpful. Also there are several hints on soldering techniques.

## Chassis

The instructions and templates were followed faithfully in construction of the chassis. I should stress that alignment is the most important part of the chassis. If this assembly isn't square, nothing else will be. In the kit I constructed, the foot board that runs from the front of the cylinders to the front beam on the engineer's side was one board too narrow. I etched a new one from sheet brass, and included a couple of knot-holes. During construction of the chassis and the other assemblies it is important to clean them up as you work. It's almost impossible to clean thoroughly if you wait until the last solder joint.

## Trucks

The trucks are models in themselves and I won't discuss their construction other than to suggest that you follow the

Here is #103 drifting down grade on the author's 2 foot×6 foot diorama. *Photo by Tom Jones.*

instructions carefully. The only complaint I had in this area was the lack of a drawing or photo that showed the location of the brake rodding and clevices.

**Boiler & Bunker**

The only change I made in this area was the stack, which is a Cal Scale wood-burning unit (#326) from my parts box. I also etched a number plate to fit inside the number board casting on the smokebox front.

**Cab**

There are several options given for the cab construction because of the interior detail to be added later. I tack-soldered the front wall to the side walls and checked for square. The front wall was then soldered to the firebox/boiler assembly, and then the side and rear walls were removed to allow easy access for installing the interior detail. I also added hinges to the front windows (non-operating) and soldered them open.

**Interior**

The interior castings included in the kit are excellent and more than adequate to make a well-detailed interior. Unfortunately the instructions do not cover this area and I had to resort to a good amount of guesswork and reasoning to get this area together. I was also fortunate enough to find a May 1971 issue of **MODEL RAILROADER**, with an article on the Silver City Shay on pages 56 through 59. The instructions refer the modeler to this article, but I'd sure like to see the drawings included in the kit. The firedoor, throttle and the reverse lever are operating castings. Even my wife was impressed.

When the detail was complete, the walls were re-soldered to the front wall and alignment was checked again. I left the roof loose and used four small pins in the corners for alignment when the roof was placed in position.

**Cylinders**

The Back Shop cylinder assemblies were finished according to the instructions and are beautiful. Care must be taken when working with the eccentric links and the valve straps as they are very fragile. I managed to break one of the straps at the bearing, but it was replaced by Precision Scale at no charge.

I followed Precision's recommendations in using the two center bearing blocks on the crankcase as load bearers. The instructions say to drill them oversize. The mechanism is smooth and a work of engineering art when finished.

**Final Assembly and Run In**

I followed the instructions for the remainder of the kit, in particular the run-in. I used an abrasive cleaner, cleaned everything thoroughly and then applied some jeweler's rouge and oil. The drive assembly was then cleaned again and oiled. The final result is one of the smoothest running engines I've ever seen. The gear ratio of 118:1 makes the top speed around 12 to 14 mph which is prototypical. Shut off the power and it coasts to a stop.

I painted the engine with Floquil paints and built a woodpile to cover the motor. The decals are Letraset dry transfer and Microscale, and were applied to represent #103 of the Oregon Lumber Co., a subsidiary of the Sumpter Valley Railroad. Glass will be put in the windows and an engineer and fireman have yet to be added, but she's already working.

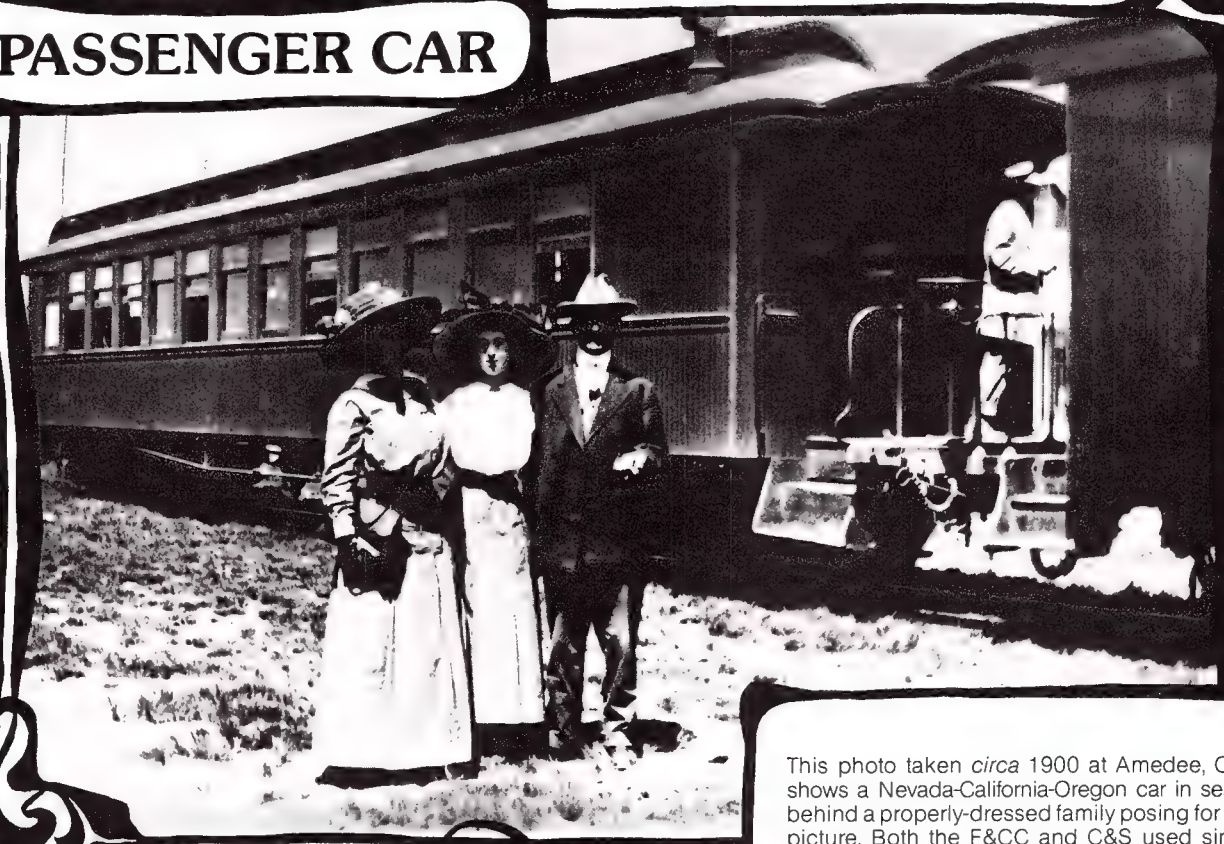
**Modeler's Notes**

This is definitely one of the finest examples of the model engineering art on the market today. Any omissions in the instructions are minor and building the model was as much a pleasure as seeing it pull a string of cars down the main.

My congratulations to the Precision Scale Company for a welcome addition to narrow gauge railroading.

The "right" side of #103. *Photo by Tom Jones.*

# NEVADA • CALIFORNIA • OREGON PASSENGER CAR



This photo taken *circa* 1900 at Amedee, Calif., shows a Nevada-California-Oregon car in service behind a properly-dressed family posing for their picture. Both the F&CC and C&S used similar cars, although the NCO cars were about 5 feet longer over the end sills. *Photo, collection of Thomas Armstrong.*

**by Thomas Armstrong**

Passengers traveled in style on the Nevada-California-Oregon Railway (NCO), even though by most standards the railroad went nowhere. By the time the NCO laid its last section of main line into Lakeview, Oregon in 1911, it had become the far west's longest narrow gauge line (about 275 miles including the Sierra Valley branch). However, in the 1890's when the company took delivery of coaches 2 and 3 from the St. Charles Car Co. the "Narrow, Crooked and Ornery" only ran from Reno, Nevada north to Amedee, California, about 80 miles.

Little information is available on the cars, but the following was included in the 1920 ICC Valuation report on the NCO:

"No. 2 and 3; American Car and Foundry Company; wood body and underframe; length over end sills 45'0"; 4 wheel composite trucks with 26" cast iron wheels; 3¾" × 6½" journals; oil lights; stove heat; open platforms."

Note that the builder was cited as AC&F. This was apparently done as AC&F had taken over St. Charles about 1900 and the report was issued 20 years later. Other cars, purchased from the F&CC and known to have been built under the St. Charles name are also included on the Valuation report as having been built by AC&F. The ICC was thus using the then-current name for the company.

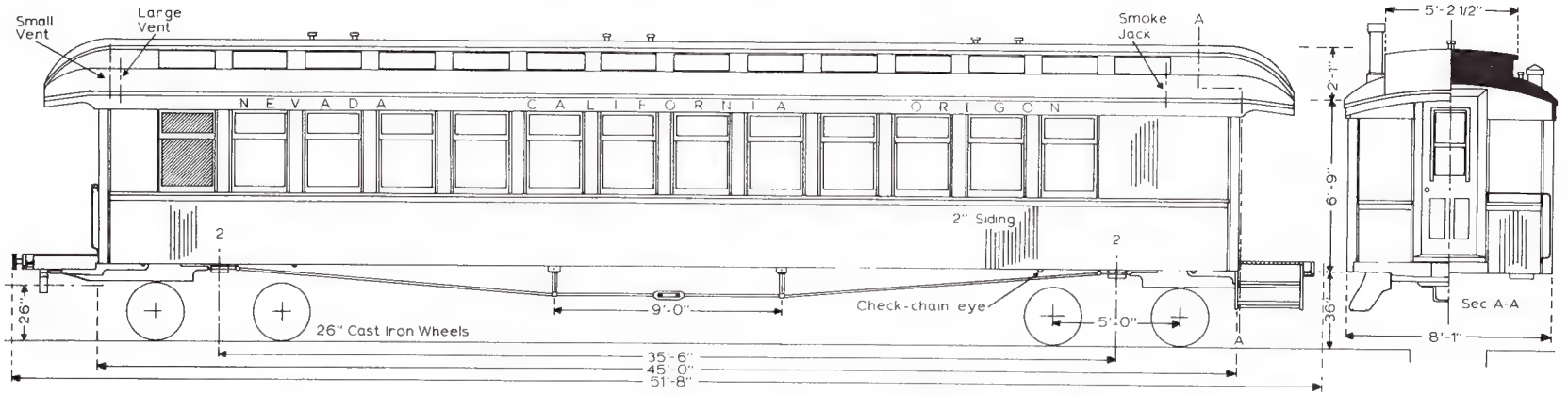
Besides the ICC report, data for the plan came from other St. Charles cars, especially coach #52, which the NCO purchased from the F&CC. Photos show that full-sized Tower couplers were apparently used on the cars, at least in later years. The paint scheme was apparently Pullman Green on the sides and black on the roof. The lettering was apparently white. Although the lettering style was an extended railroad Roman, its exact style and placement varied over the years, so the lettering on the plan is just an approximation to show typical placement. The underside was sheathed, with the boards running cross-wise between the bolsters and lengthwise between the bolsters and end beams. Thus, no body sills show for modelers to worry about. The interior details shown are based on general practice, and the brake rigging was undoubtedly standard also.

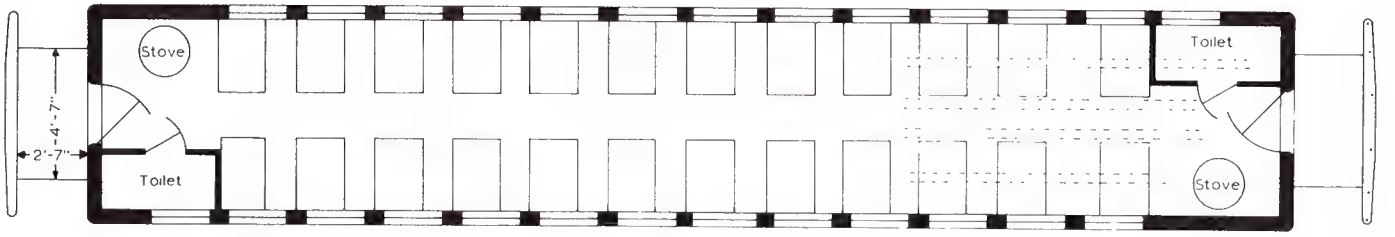
The cars apparently lasted to the end of the NCO in 1929. Their disposition is unknown although the bodies were probably sold locally in Alturas along with dozens of others. Some of the St. Charles passenger car trucks were taken by the Southern Pacific to their Mina-Keeler line and used under older cars operating there. The SP broad-gauged the last of the NCO in 1929.

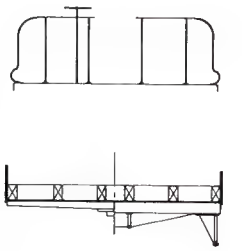
I became interested in the NCO several years ago when I wanted to model its equipment. Finding little information available then, I have since collected plans for over 30 pieces of rolling stock and locomotives. Many plans for modelers already exist showing NCO equipment on other railroads, either before or after its NCO use. I welcome additional information on the NCO and its history and rolling stock. The plan is available in ¼ inch scale from Coronado Scale Models.

# NEVADA-CALIFORNIA-OREGON RY.

Coaches No. 2 & 3
Built by St. Charles Car Co.



Full-sized Tower couplers used, at least in later years.
Cars probably painted "Pullman Green" on sides with black roof, underbody.
Lettering probably white.
Bottom of cars sheathed. Platform and end beam styles varied over the years.

Data from 1920 ICC Valuation report, photos & dimentions from other cars built by the St. C. C. Co.
Built new for NCO circa 1900.

Scale: 3.5mm = 1 foot
No. NCO-C1
Drawn 5-'78
By T. Armstrong

# The MODELMAKERS NOTEBOOK

# A Small Cargo Schooner for Your Railroad Scene Part 3

by Al Armitage
Photos by the author

**The Masts and Standing Rigging**

Parts one and two dealt with the hull and deck fittings of a cargo schooner suitable for either east or west coast dock side scenes. Part three begins the description of the rigging. I will describe the standing rigging in this issue and go onto the running rigging in the next issue.

Before you start rigging your schooner you have to build the masts and spars. Perhaps the best material for masts and spars is birch dowels, if you can get some nice, straight ones. Shop around until you find some with no rough spots or "cross grain". Lacking suitable dowels, make your own from square stock, either pine or bass, by planing and sanding to shape. Again, choose straight grained wood.

The prototype masts had a very slight taper upward from the deck but, for the model, they can be straight. Take the length from the outboard profile, adding enough to reach down to the mast steps. The top of each mast, from the underside of the trestletrees up, is squared as in Fig. 12. This section, where upper and lower masts overlap, is called the "doubling". Make the trestletrees from wood, or styrene, and fasten them in place seated down on the shoulder formed by the squaring. Note that trestletrees are parallel to the Low Water Line (LWL) on both masts. The futtock band is an iron hoop, with eyes on each side, for the futtock shrouds. On the model, a strip of paper, or styrene will suffice. To make the eyes, drill clear through the band and the mast. Turn an eye in one end of a bit of wire, run it through the hole, then bend the second eye as close to the band as possible. Bond in position with eyes horizontal.

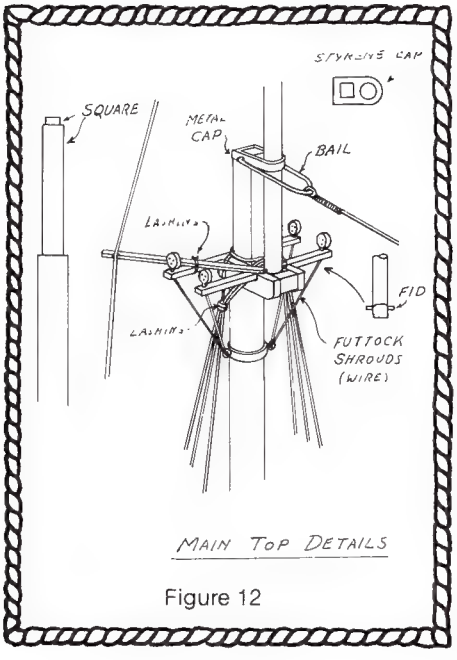



Figure 12

The crosstrees should be made of hardwood, such as maple, or from square brass as they must be fairly rugged. Drill the ends for the futtock shrouds which are best made from soft iron wire so it can be easily bent around the groove in the small deadeyes and twisted up tight at the bottom. Only a few turns are needed and the twisted part goes into the holes in the crosstrees.

File notches in the trestletrees to fit the crosstrees so the tops are flush. Paint the doublings white, including the crosstrees and trestletrees. The remainder of the mast should be stained a dirty orange-brown and given a coat or two of lacquer to simulate the varnish of the prototype. This ought not to be too shiny (unless you want a "new" vessel) so, if your finish looks too glossy, rub it down slightly with fine steel wool to take off the "shine".

The top masts are tapered, from the caps upward, and have a flattened spot, on the front at the bottom, which forms a shoulder that rests on top of the forward crosstree when the mast is dropped into the socket made by the trestletrees and the crosstrees. A small pin, called a "fid", goes through the mast and rests on top of the trestletrees, also. (See Fig. 12.)

The "cap" is best made from brass, for strength, as the part that wraps around the topmast is, in reality, quite thin. If you choose to make it from styrene, use heavier proportions as shown in Fig. 12. This is more like the wooden caps often used instead of iron ones.

Finish the topmasts like the lower masts with the caps and doublings white. Do not install the upper masts just yet.

There are ten "hoops" on each mast, to hold the sail in place and allow it to be raised and lowered. On the real vessel, these hoops are made of wood, steamed and bent to shape. For the model, they can be cut off a piece of brass tubing or machined from styrene, in a lathe, as mine were. They should not be more than ⅜" inside diameter. You might find brass rings of a suitable size in a crafts shop, or yard goods store, but they would not have the proper rectangular section. Paint them to represent wood and slip them into place on the masts before installing the boom rests. The hoops should be on the masts even if you don't plan to put sails on the model.

The boom rests are turnings bored to fit each mast and have four little gussets under them for extra support. Make them of styrene and paint white. The mast "coats" can be made of styrene, also, and painted white.

Mount the boom rests, locating them from the inboard profile. Note that they are parallel to the LWL in each case.

The booms are 3/16 inch dowels which are straight except for the taper that occurs at the outer ends. The boom jaws can be wood, or styrene, set into slots sawed in the boom. Make the gaff jaws the same way but note these have a slight bend to them. Finish the booms and gaffs like the masts with the jaws and outer ends white.

The "monkey collar" is made from small beads on a bit of thread tied to holes in the jaws. (See Fig. 13.) Leave these off

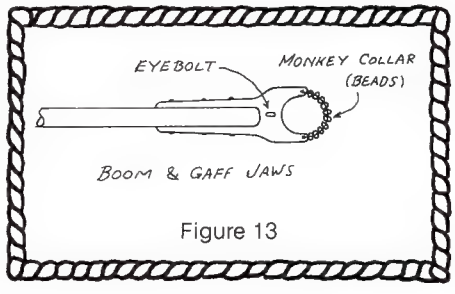
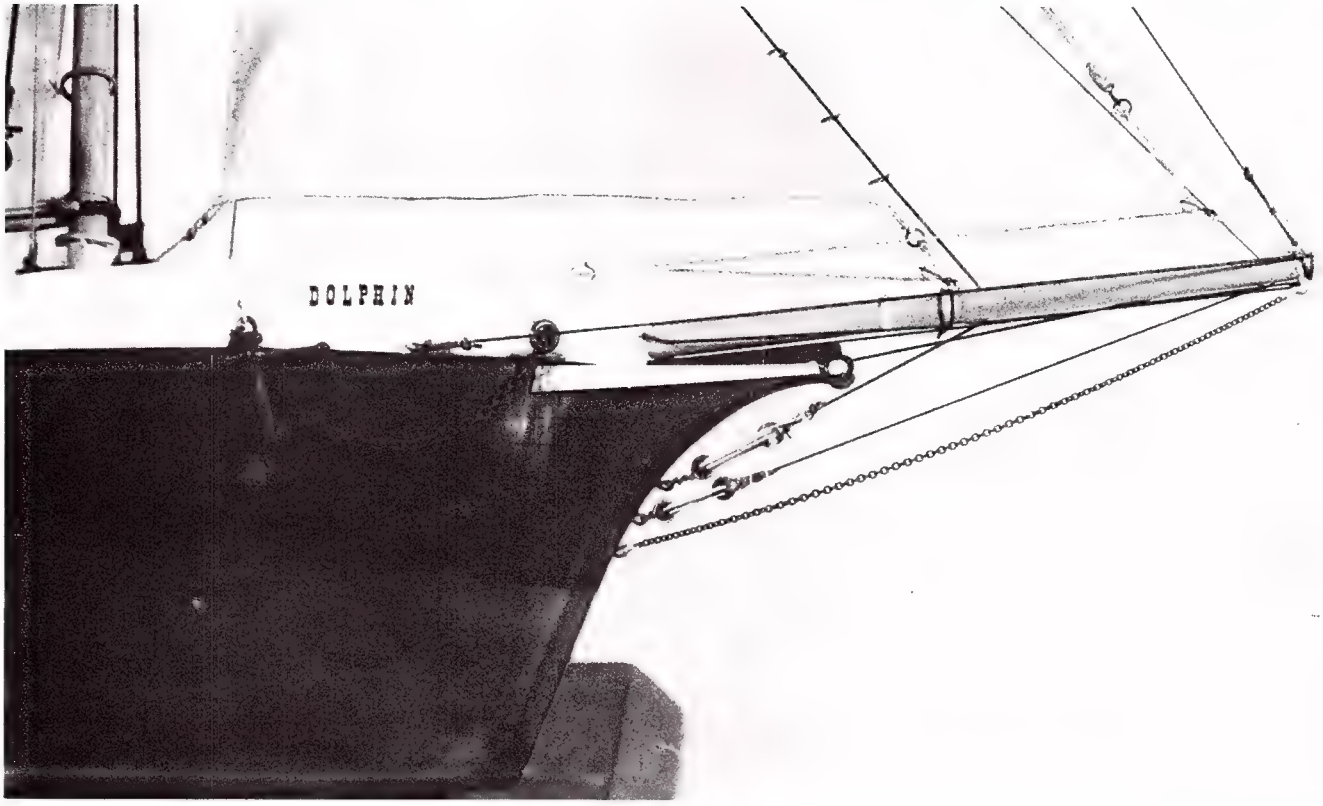



Figure 13




The bowspirit rigging as it appears on my model. Note the anchor hanging over the side.

until the gaffs and booms are installed later.

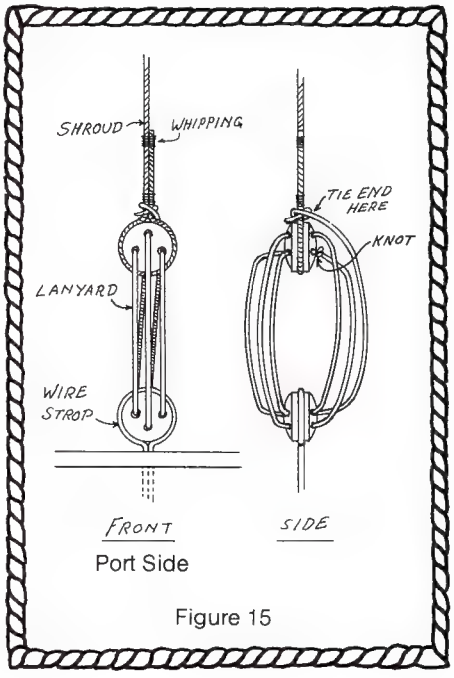
On some vessels, the inner jib had a boom, rigged like the other boom with a traveler, etc. However, the foredeck of our model is a little short for this so I used a "loose-footed" jib. The other two head sails would only be set if the vessel was at sea so are not necessary on the model.

The bowsprit is made from a dowel and is tapered from the point where it goes through the rail to its outer end. The inboard end has "flats" on all four sides as shown on the inboard profile. The "heel" butts against the Sampson post where, actually, a square tenon on the spar fits into a socket in the post. File the hole in the rail so the spar just slides through for a neat fit. The inboard part is painted white, the rest finished like the masts. Add the eyebands and drill the holes for the stays to go through. Don't install the bowsprit until you get around to rigging the fore stays, etc.

Before we step the masts, the lower deadeyes have to be set up for the shrouds. These are "stropped" with soft iron wire, as in Fig. 15, with holes in the position shown. Drill a snug hole through the rail and down through the waterway. The holes should follow the angle of each shroud. Leave the wire long enough to go well down into the lower hole and bond with ACC. There will be a great deal of strain on these deadeyes so they must be firmly fastened in place. Paint the wire the same as the bulwarks, below the rail, and black above the rail.

With all the deck fittings in place and everything painted, the masts can be stepped and the shrouds installed.

A ship's rigging is divided into two classes, the "standing" rigging, which includes all shrouds, stays, and other "fixed" rigging, and the "running " rigging, which includes all lines, halyards, sheets, etc. used to raise and lower the sails, etc. The cordage used for standing rigging was usually a dark brown, or black, color because it was "tarred" with pitch to prevent rotting. Running rigging was a natural hemp color, as a rule. The term "halyard" comes from the fact that it was a line used to haul the yards into position on a square-rigged ship. It later became a general term for any hauling line regardless of what it hauled.




Port Side

Figure 15

Here is where you use that beeswax you bought. Each length of cord you use for rigging should be pulled across the wax cake a couple of times and then rubbed down with a soft cloth. This impregnates the cord and makes it less subject to moisture and humidity changes. If you don't use the wax, your rigging is apt to be hanging loose one day and fiddle-string tight the next if you live in an area with frequent weather changes.

Drop the lower fore mast through the deck and into its step, not forgetting to slip the mast coat over it first. Next, cut a length of the heavy black cord long enough to go from the rail, up over the trestletrees, and down to the other rail, plus a little extra for "bending in" the upper deadeyes. Since there are three shrouds on each side, the forward shroud goes up one side and down the other. The two remaining shrouds go up one side and down the *same* side.

Bend a deadeye into one end of the forward shroud, as shown in Fig. 15, seizing it tightly with fine thread (silk) and bonding it with a drop of ACC at each sieze point. Be sure the holes are in the correct position with the odd hole up.

There is a system to reeving the lanyards for deadeyes. On the port side, the knots go in the after hole and the lanyard is rove forward. On the starb'd side, the knot goes

This photo shows the rigging around the masts and how the gaff halyards and stays are set up.

in the forward hole and the lanyard is rove aft. (Port is left, starb'd is right.)

Reeve a lanyard through the holes to hold the deadeye at about the level shown on the outboard profile. Run the shroud over the trestletrees, between the masts, and down to the opposite rail. Now comes the tricky part. Pull the shroud down firmly and decide where the deadeye should go to attain the same level as the first one. I suggest you bend in the deadeye with temporary seizings, reeve the lanyard, and pull up taut. If the spacing doesn't match, loosen the seizings and make the necessary adjustments. When you are satisfied, seize the deadeye permanently and tighten the lanyards on both sides. A certain amount of adjustment can be made by loosening or tightening the lanyards before you finally tie them off. The shroud should be taut but don't put too much strain on it or you may pull a deadeye loose from the rail. Incidentally, Fig. 15 shows the outboard view of the way the lanyard is rove through the deadeyes. All deadeyes should be set up this way.

Now, carefully check to be sure the mast is perpendicular to the deck, viewed from the bow. When correct, a drop of ACC where the shroud goes between the masts at the top will set the mast in final position. Check the rake angle, using a temporary forestay to pull the mast forward, if need be. When correct, bond the mast coat to the deck.

Add the remaining shrouds to the foremast, setting up the deadeyes as before. Remember, this time the shroud goes between the masts, around the squared part, and down on the same side. Leave the lanyards fairly loose until both shrouds are in place on both sides then, carefully, take up the slack progressively, on each lanyard, until the deadeyes are all level. This will not be too easy but can be accomplished with patience and it is important in achieving a neat, "shipshape" model. Lash the shrouds at the mast head as in Fig. 12. Tension should be about equal on all shrouds, of course.

The back stay is rigged in similar manner, with a loop and a half hitch, at the top of the topmast, before going down to the opposite rail. However, leave this off until the main mast has had its shrouds installed. Follow the same procedure in rigging the main mast shrouds. Check the rake angle and be sure the mast is vertical when viewed from the bow.

With the shrouds set up on both lower masts, you can "ship" the top masts and set up their deadeys. Top mast shrouds go up and around the mast, with a half-hitch, and own on the same side. Again, leave the lanyards loose for final adjustments.

Install the outriggers, preferably made of brass, into holes drilled in the heel of the top mast and lashing them to the outer end of the after crosstrees. The outboard end of the outrigger is notched to fit the backstay which can, now, be set up with deadeyes like the shrouds. After these are rigged, lash a "sheer pole" in place with a couple of turns of thread around each shroud and back stay. (See outboard profile.)

Fig. 12 shows a "bail" attached to the main cap. It is made of fairly stiff wire and fitted into holes drilled in the cap. The main stay runs from the bail to an eyebolt in the back side of the fore cap. If the cap is brass, solder the eyepin in place. If the cap is wood, or styrene, drill well into both masts with a tight hole for the eyepin and bond with ACC. This eyepin must take the strain of both main stay and main top mast stay so must be firmly attached to the cap. However, these stays should not be so taut that they pull the masts out of alignment.

Next, you can ship the bowsprit and bond it in place. Add the back ropes as shown on the deck plan, setting them up to eye pins in the hull molding.

The inner fore stay goes through a hole in the bowsprit and back to a deadeye set-up at the stem. The upper end loops around the mast and is seized, as shown. Rig the outer fore stay the same way. Again, be sure the eyepins in the stem are well bonded to prevent pulling them out.

The "bob stay" is a length of 26 link chain set up to eye pins in the outer end of the bowsprit (eyeband) and the stem. (Twenty-six link means 26 links to the inch.)

Add the "foot ropes" using fine thread, or fine wire, if you prefer it. As the name implies, they were what the deckhands "walked" on to handle the head sails out on the bowsprit.

Install the fore top mast stay, being careful not to put too much strain on the fore top mast. You don't want to bend it out of alignment.

This should complete the standing rigging so check it over to see that you haven't forgotten anything and that all is "shipshape". I will describe the running rigging in the last installment of this schooner series in May.

## Back issues available:

☐ **MARCH/APRIL 1979** – East Broad Top, EBT Weight Car, Heinz Coffin Cars, Black Canyon in HOn3, Sandy River & Rangeley Lakes RR, Balboa C-19 Becomes RGS #41 Part 2, Sandy River RR, Designing Structures to Fit Part 2.

☐ **MAY/JUNE 1979** – D&RG & D&RGW Cabooses, V&T Box Car #1011, Assembling the Kemtron 0-6-0T Kit, Western Sawmill, Logging Mallets Part 10, Tonopah & Tucumcari, Notes on Precision Scale Diorama.

☐ **JULY/AUGUST 1979** – Bellevue & Cascade Part 1, Vintage Trucking, 16mm Narrow Gauge, Yorke Brick Store, Rio Grande Southern 1939, Balboa C-19 Becomes RGS #41 Part 3, Railshed Display, Branch Line Terminals, Jigs & Fixtures, Gila Pacific Yard Office & Bunkhouse.

☐ **SEPTEMBER/OCTOBER 1979** – Military Light Railway Locomotives of U.S. Army, Auxillary Sound Car, C-19 Becomes #41 Part 4, Rio Grande Bear Traps, McGiffert Log Loaders, Painting Two Foot Cars, Whiffletree & Kinky Creek Ry. Co., Color Basics, Bellevue & Cascade Part 2.

☐ **JANUARY/FEBRUARY 1980** – C&NW in Black Hills Part 1, Old Stone Store at Buffalo Colorado, Forks Creek Station & Eating House, Prototype Mix of Equipment, On3 Rotary by Durango Press, Framing Phillips, C-19 Becomes #41 Part 6, Building Ariel.

☐ **MARCH/APRIL 1980** – On30 Gauge Mogul, Forks Creek Section House, HOn3 C-25 Rebuild, Magic of the Rio Grande, C&NW Part 2, Phillips Trackwork, Woss Camp Water Tank, Logging Mallets Part 12, Industrial Tramways.

☐ **MAY/JUNE 1980** – Car Ferry for a Ferry Slip, Lettering Cars, Turnouts & Turnout Control, C&S Coal Cars, Dog Hole Steamer, Bellefonte Central RR, Debugging a Mason Bogie, Solderless Locomotive Construction, Rock Formations.

☐ **JULY/AUGUST 1980** – V&T for Modelers, Forney Affair, Barrels & Steel Drums, West Side Shays, Black Hawk Station, Car Ferry Part 2, Modifying the Northwest Short Line Quartering Jig, HOn30 Two Foot, Stovepipe Canyon, Bridgton & Harrison.

☐ **SEPTEMBER/OCTOBER 1980** – Los Pinos Western, Logging in Sn3, Sn3 Heisler Conversion, Sn3 Parts List, C&S & RGS Box Cars, Weathering Signs, Brass Doweling for Stronger Models, Buildings at Phillips, Backyard Locomotive, Humbrol Paints, German Military Light Railways of WWI, Matchbox Traction Engine Rebuild.

☐ **NOVEMBER/DECEMBER 1980** – Cerro-Bend Casting, The Eagles Creek Heisler, The Phillips Station, Black Hawk Buildings, Hobart Mills On3 Caboose, A 1920 Concrete Mixer, The CONX Tank Cars, Lancaster,Oxford and Southern Motor Car, A Small Cargo Schooner for your Railroad, Rolling into Bridgton.

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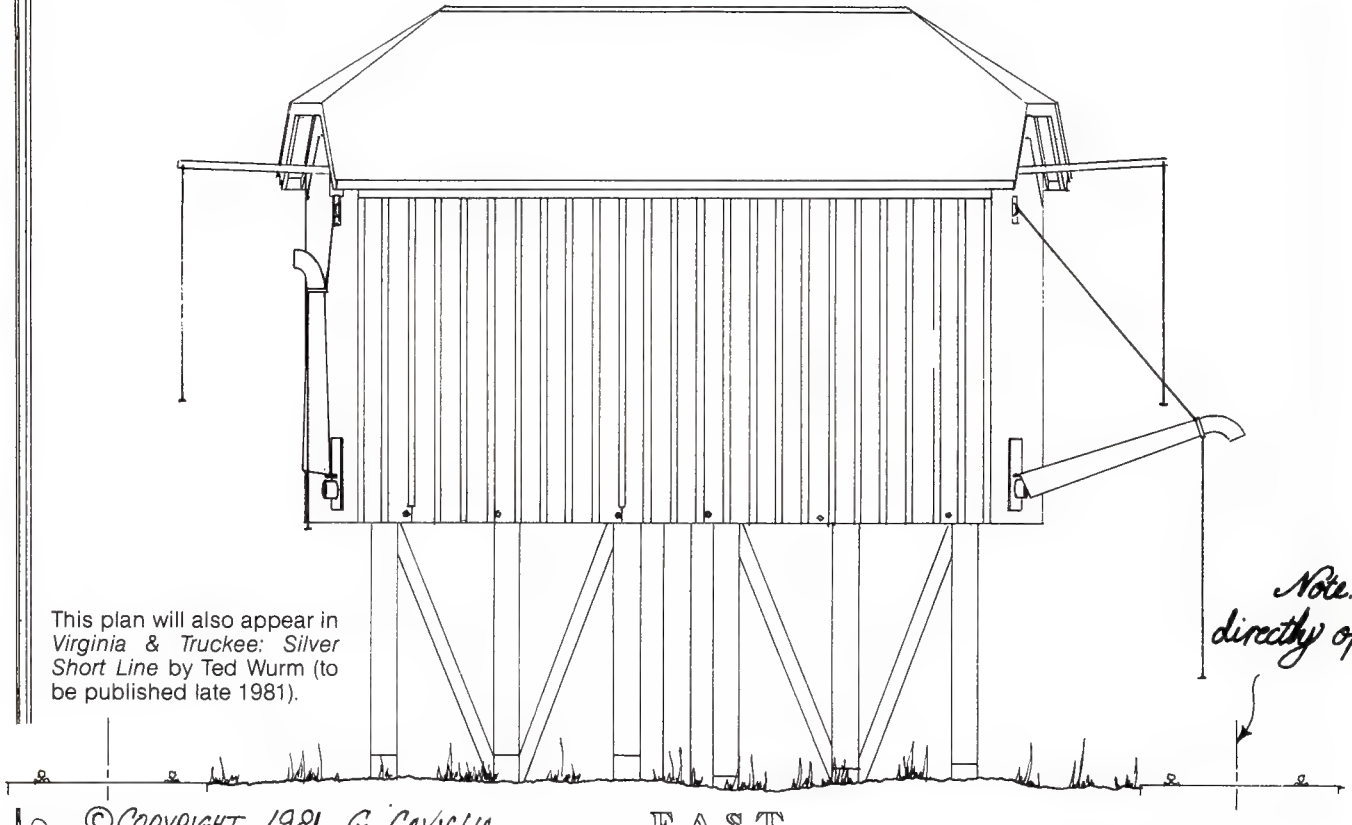
# VIRGINIA & TRUCKEE RAILWAY

## Water Tank, Carson City
## Built 1887; Circa 1930

*Drawn by Gary Caviglia*

Scale: 3.5mm = 1 foot

This photograph was taken looking west toward the Carson City, Nevada station in 1949. The line at the left was the original freight line in from Reno and bypassed the station by running on Caroline Street. The Number 26 is standing on the main line to Virginia City, Nevada. Notice that each end of the water tank is lined up with the diverging lines of the track. *Photo, Graves-Pennington collection.*




This plan will also appear in *Virginia & Truckee: Silver Short Line* by Ted Wurm (to be published late 1981).

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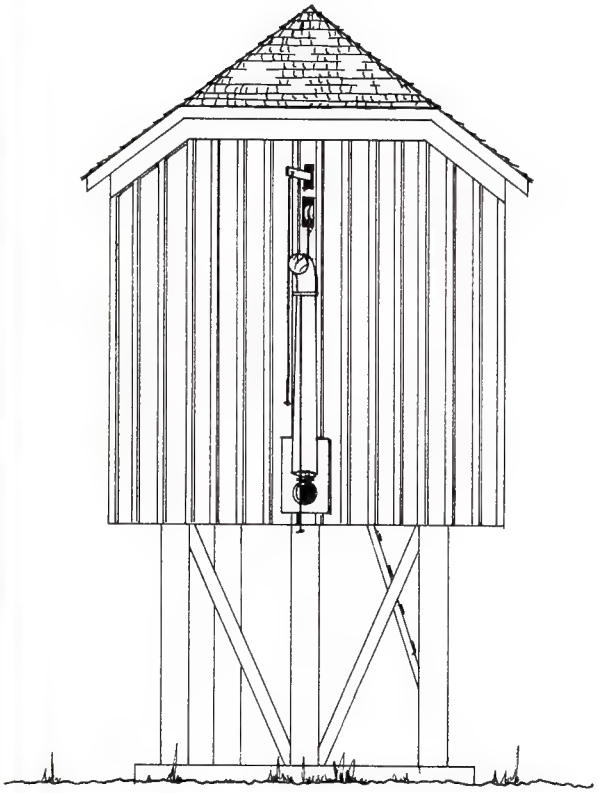

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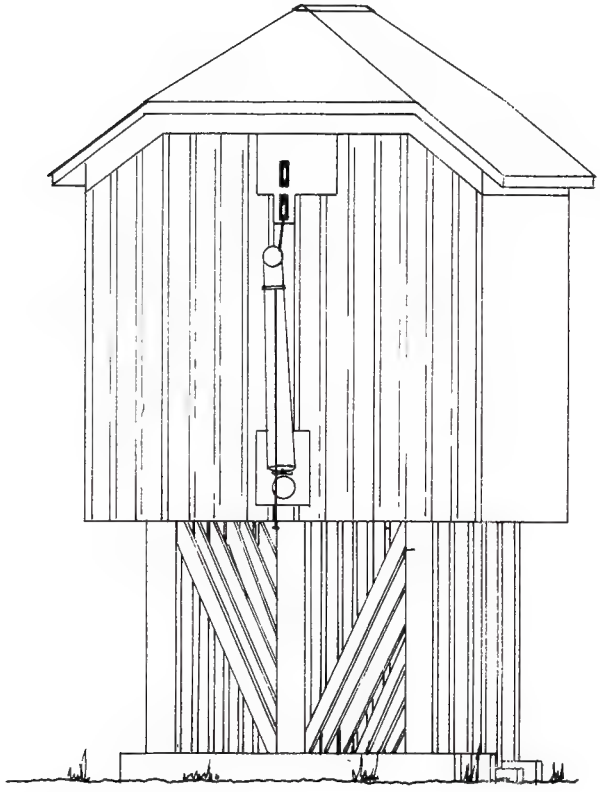

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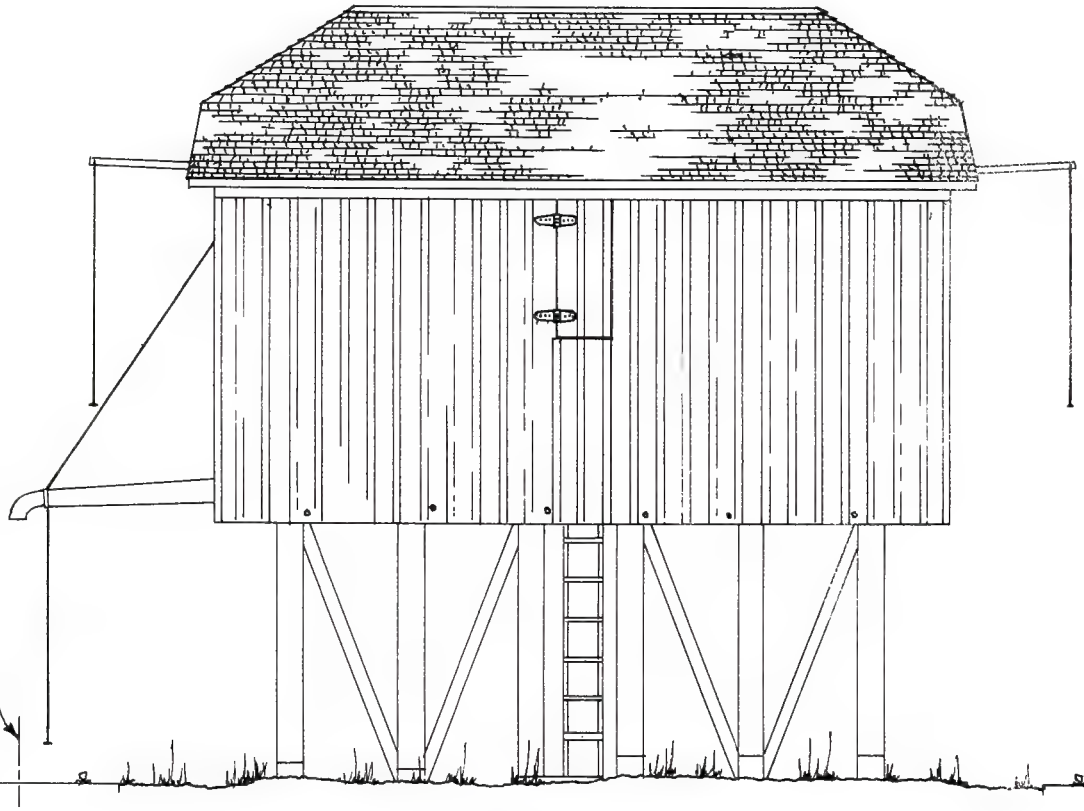

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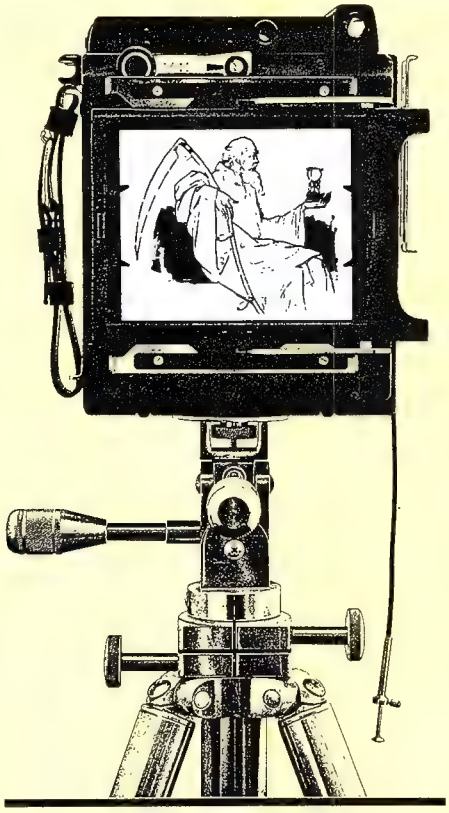


# The Time Machine

**by Reg Shaffer**
**Photos by the author**
**Drawings by Chris Vardas**

Back in 1895 H. G. Wells wrote a story called "The Time Machine". The characters could enter any period of history by setting the dials on the machine. Time machines remain the stuff of science fiction but if you stop and think about it model railroaders are always "traveling in time".

By just concentrating on it we can bring back any era of railroad history we want. Well, it's not quite that easy but it's a lot safer than Well's time machine. The dials on our time machines are inspiration, research, technique and dedication.

The inspiration for my Timber Creek station came one day when I was traveling in time through my own store of experiences. I remembered as a boy going down to the station with my dad on Sundays. We watched the people and the trains; I remember the atmosphere and a big Southern Pacific Daylight G.S. 4 locomotive taking on water.

Suddenly there it was in my mind's eye–a small water stop station located about 2500 feet up on the western slope of the Great Rocky Mountain in Colorado. A two story Victorian style depot. There I was back in my favorite era, the early 1930's watching the narrow gauge branch line train pull up to the station.

It was late afternoon and getting dark; the passengers dismounted. I could see them entering the lighted station–a haven of warmth and comfort on a chill November evening. Some headed for the interior toilet–a real luxury on this branch line station. Others greeted relatives and went off home with their families. A few settled down to wait for the bus in the morning. And one found his way outside and upstairs to the luxury of the public bath where a vestibule kept out the weather when the door was opened. As the train departed I saw the station master climbing the stairs to his second floor quarters. The fire was lit and the room was warm and comfortable.

Then I snapped back in time to present reality; I had work to do but the idea remained and I began the research that led to the Timber Creek station. The second dial on our time machine is research. I used those other "time machines", books, magazines, and photos to fill in the details of my trip on time.

Finally I was ready to create my scene. I found a kit which was close to what I had in mind. When I started to build it I found that all the wood was inferior. So I threw all the wood away. It was time to turn the third dial on our time machine–technique. I cut my own walls using the kit plans and my own templates.

I worked slowly, completing each wall inside and out with it flat on my work bench. The card stock and wallpaper I used for the inside walls gave a nice interior and the card stock is heavy enough to keep light from bleeding through the walls during long exposure photography at night.

I used Hot Stuff, an ACC adhesive to assemble the entire structure. Regular Hot Stuff, not Super T Hot Stuff. Super T works much like ordinary glue but regular Hot Stuff has the thickness of water. It flows into the smallest joint without making a fillet and will only glue two pieces together when they fit exactly. You can't have a bad fitting joint with Hot Stuff. I worked out a really nifty way of applying Hot Stuff using a draftsman's ruling pen. The drawings and captions show how it's done.

My station began to take shape as I used these techniques with time and patience. Soon the windows were in place–and the fireplace. How to get those warm and welcoming interior lights? Technique again. The details are shown in the sketches. I constructed six independent electrical circuits for the different rooms and the fireplace. Each is controlled by a toggle switch on the front panel of the diorama. There is a miniature jack in the back of the frame to plug in the electricity. I have two power sources. I use a 15 volt battery pack for viewing the lighting system directly. When photographing it I use power from a 9 volt DC converter like the ones used for radios and calculators. My 16 volt bulbs burn low like gas lights with the 9 volt current. The effect is excellent for time exposure night photography.

So there it was, my trip in time had become a reality in present time. You see the result in the photos. Every time I thought I didn't have the time or patience to finish it, dedication to my original vision kept me going. Actually I was sure from the beginning that I wasn't going to lose interest because "traveling in time" has such a fascination for me.

Timber Creek Station took a first place award in the Coast Division meet of the PCR-NMRA at Walnut Creek, California scoring 105 out of a possible 125 points. A photo of Timber Creek won a prize in the 1979 **MODEL RAILROADER** photo contest. The station is incorporated into my layout most of the time since it sits on an HOn3 diorama about 20 inches long by 12 inches deep. I hope to do another article for the **GAZETTE** on scale model photography.

These are just some of the rewards my own special time machine has brought me. The best part was the hours at the workbench when time seemed to stop as my time machine turned thought energy into "doing" energy.

Blue
Ribbon
Series

TIMBER CREEK

TIMBER CREEK

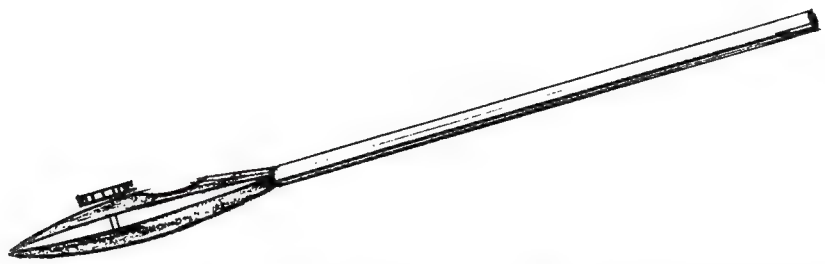
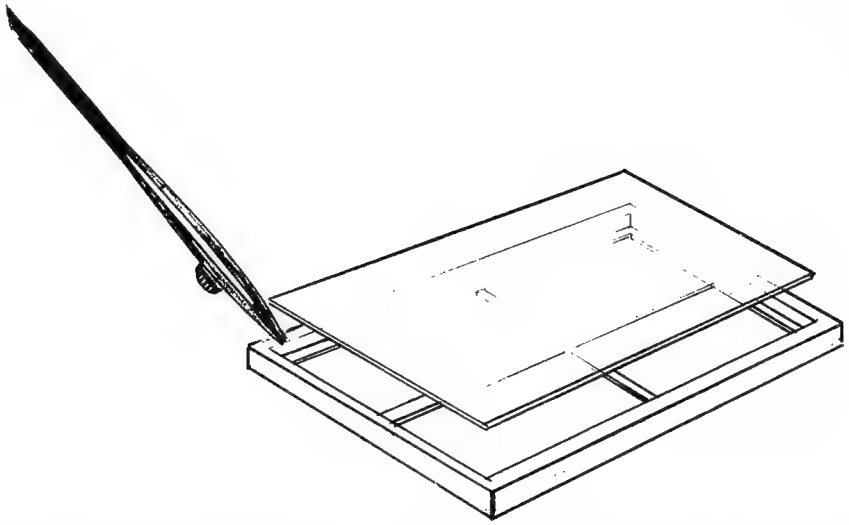


Figure 1. A draftsman's ruling pen. I use it to apply Hot Stuff. First I seal every thing porous by pre-coloring it. Once you get this done just load about 1/16" of Hot Stuff into the pen as you would ink and adjust the pen for a very small opening. Hold the two pieces to be glued together and touch the tip of the pen to a spot on the joint just long enough to cause the Hot Stuff to flow. When it flows pull the pen away and wait about 10 seconds. If you did it right your joint should be stronger than the wood itself. After a few uses your ruling pen tip may need cleaning. To clean it, open up the blades and scrape the insides with a #11 X-Acto knife blade.

Figure 2. By putting the glass on the inside of the window frame and touching the pen to the joint, glue will flow all around the joint and stay under the joint so you can't see it from the outside. When applying Hot Stuff, the less the amount, the better. Hot Stuff is particularly good when applying window glass. All you need do is cut the glass with a little overlap on the inside of the window frame, lay the glass down on the inside of the frame, hold it in position with the tip of an X-Acto knife and touch the tip as before on the glass and frame at the same time. You can see the Hot Stuff flow around the window gluing it in instantly. Using regular Hot Stuff you can get your pieces into correct position before you apply the adhesive.



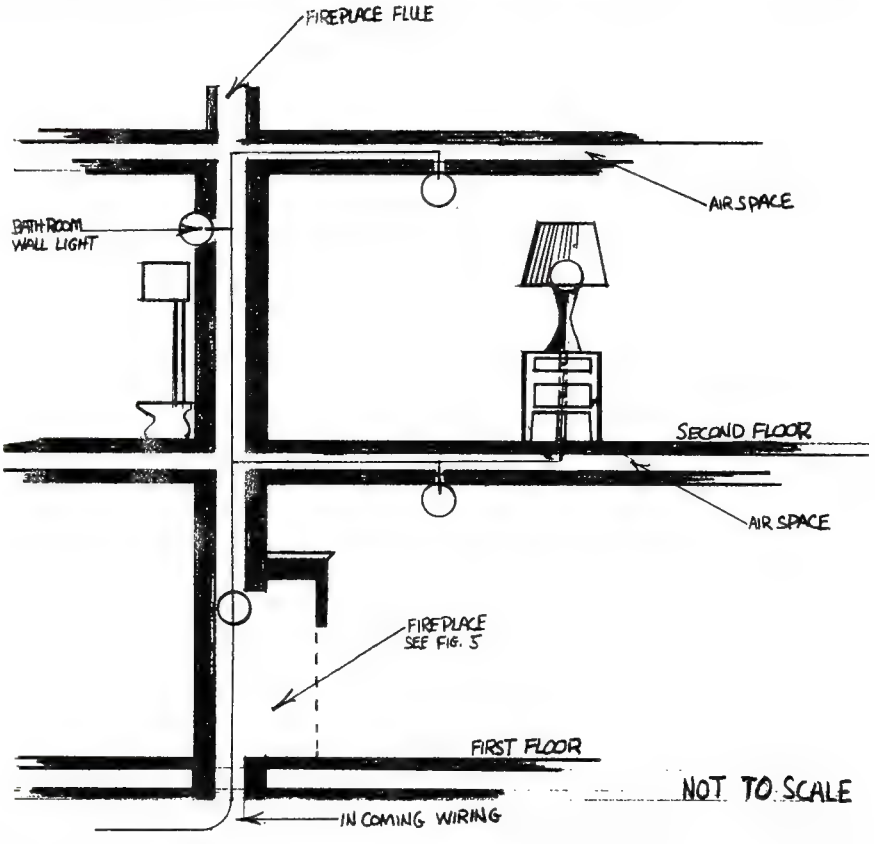



Figure 3. A cross section of the wire routing. By using the fireplace flue as a tunnel and the second story floor with a double thickness and air space in between, you can completely hide the wiring.

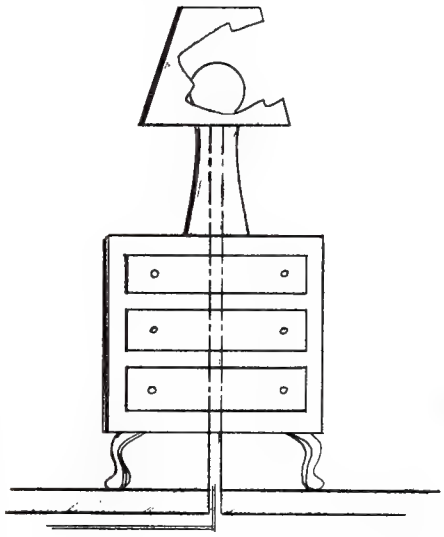
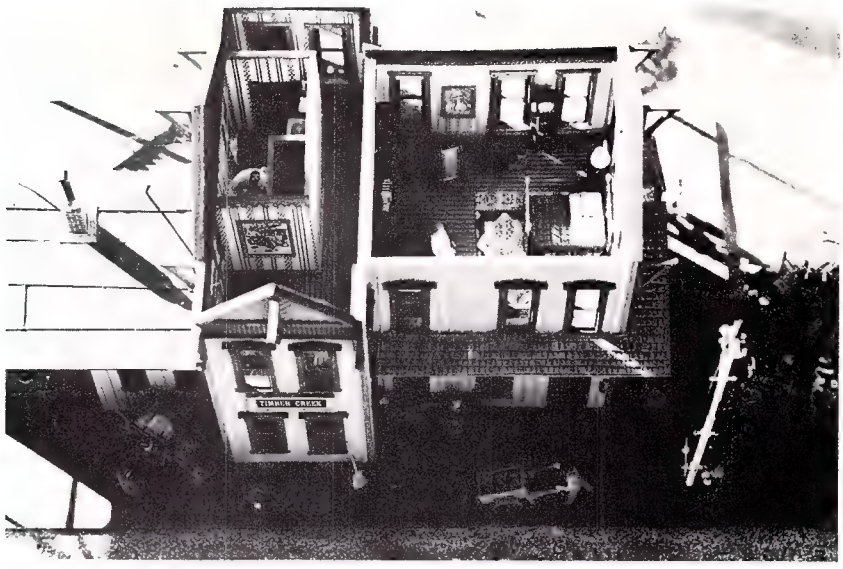
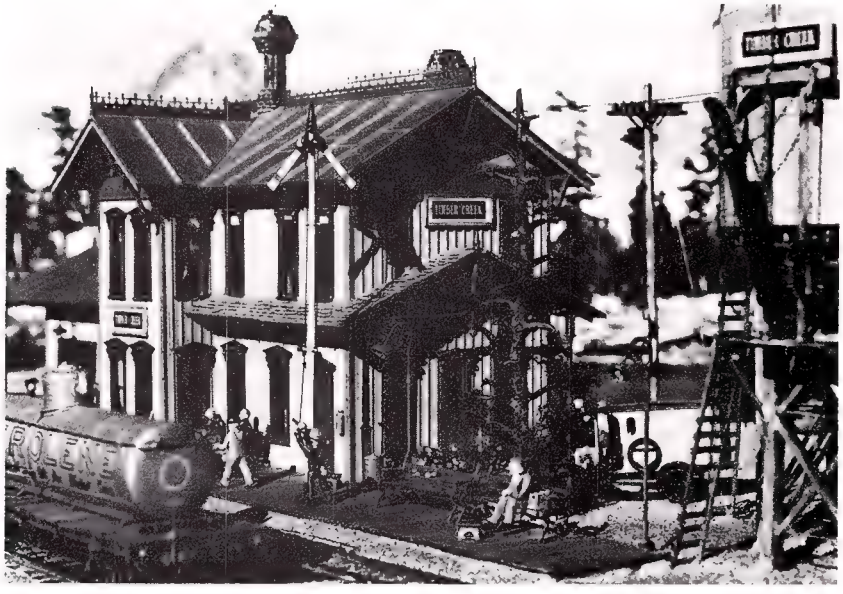


Figure 4. By drilling a hole into the furniture casting and then into the lamp base you can thread the grain-of-wheat bulb back to the floor for a connection. Then all that needs to be done is to glue the lamp shade to the grain-of-wheat bulb and you have a desk lamp.



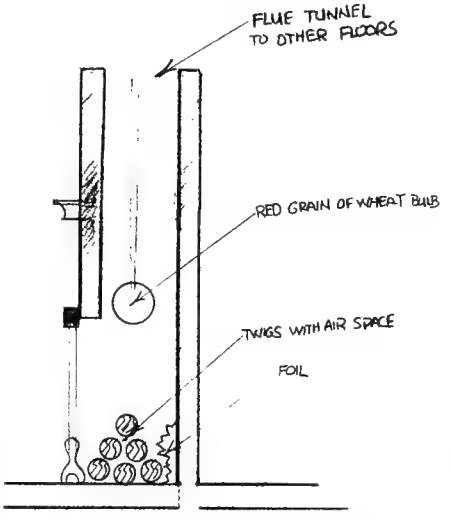
A bird's eye view showing the station with its roof on. If you look closely you can see the electric desk lamp to the right of the bed. But don't look too closely because Old Fred the station master is taking a bath with the door open again. Just to the right of Old Fred is the top of the flue from the fireplace. ▲

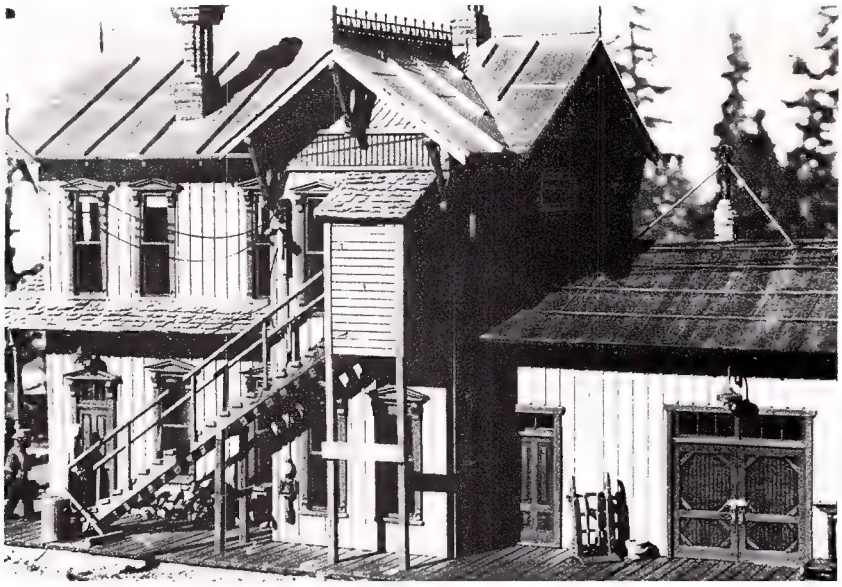
Timber Creek in 1930. Notice how the use of figures adds "life" to the scene. ►

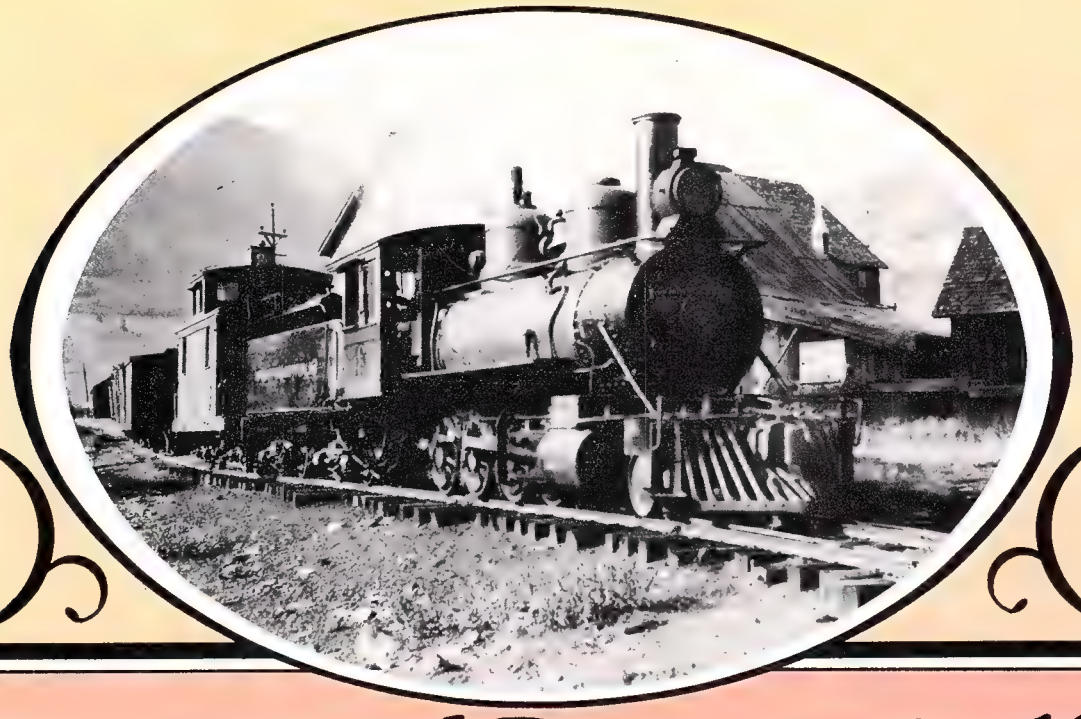


The rear of the station showing the outside vestibule stairway. Note how close attention to detail pays off in adding interest to the scene. ▼

Figure 5. How to make a fireplace light up. A grain-of-wheat bulb is dyed with red glass dye. Then you hang the bulb just above the fireplace opening. Cut twigs from the garden for logs and glue these to your grate. Behind your grate glue some crumbled up tin foil, but don't let it show from the front. Make sure you leave a little space in the logs so you can see a red glow from the foil. When the red light is turned on your fireplace will come to life.





# Silverton and Durango in 1939

by Ted Wurm

Heading south from Ouray toward Silverton and Durango was like preparing to climb a near-vertical mountainside rising into the clouds. This was in the summer of 1939 and we had been told there was a "Million Dollar Highway" recently opened out of Ouray over the summit. Following a sign, we found a shelf carved out of the face of the cliff, a lane and a half wide, headed toward Sun Mountain and Silverton. All drivers appeared to be in first (low) gear both climbing and descending, so there was little danger of collision. The car boiled; the air cleaner came loose; but we eventually reached the top near Sun Mountain at an elevation of 11,018 ft.

This area was at the end of what had been the Silverton Railroad and it was sad to look over mine and railroad ruins, discarded equipment, and abandoned shanties. Even in summer's heat there was a chilling aspect to the remains and one could shiver to imagine railroading in this place during long-ago winters. The road was laid down the old right-of-way and soon we sighted Silverton situated in its pretty little valley beside the Animas River. Besides the D&RGW line from Durango, at one time there were three other narrow gauges operating out of this small town. Bob Gray and I didn't know what we'd find remaining from these lines, since only the Silverton Northern was intact and the last train had operated (as of that time) about a year previous.

Thinking of the busy mines and mills of years gone by, and of heavy trainloads of ore and concentrates brought out of the mountains, of carload after carload of equipment and supplies passing through Silverton, we prowled around looking for relics. Silverton, Gladstone & Northerly and Silverton Railroad being long gone, our search carried us straight ahead from the "Grande" depot, up rusty rails that were a virtual extension of the D&RGW along the edge of town and up the far canyon of the Animas River. This led to the property of the Silverton Northern, which had a couple of sidings of deteriorating boxcars and two engine sheds, both securely locked and barred. One was wooden with two tracks and no apparent way to peek inside. The other, of sheet iron, had a single track and we could make out a small Consolidation inside, presumably the SN #3. Out in front of this building was a newly-painted tender lettered "Silverton Northern" and numbered 4. Among the better-looking boxcars, we were able to shoot pictures of SN 2006 and a car numbered 1008 with the old "S.G.&N." letters showing. Silverton Northern passenger coach 4, minus running gear, was in use as a storage shed in a nearby backyrad, while the skeletal remains of some sort of gas railcar completed the railroad scene.

We asked several people about information on the Silverton Northern locos and their future, if any. Someone directed us to the court house, where the County Recorder was supposed to know all about the dormant rail line. We even thought of offering a ~~couple of~~ bucks to have an engine steamed up and spotted outside for us–Silverton loco pictures were extremely rare in those days. But the official was out of town and no one else could help, so that was that. About this time a whistle was heard down by the depot, so we rushed back in time to see D&RGW #475 steam into town with the twice-weekly mixed train from Durango. We watched the switching, saw #475 turned on the wye, then while the crew went "on the spot" for lunch, Bob and I plotted our course of action.

We had this strange urge to hop a ride on a narrow-gauge freight car and this looked like as good a time as any. One could ride while the other drove down toward Durango, and we could change off

*Title photo:* Silverton Northern #3 on the "last run" in August 1938 near the D&RGW station in Silverton, Colorado. The photo was taken just before they turned the engine and caboose on the wye at Silverton for a trip to Eureka. *Photo by James Orsborn from the collection of Ted Wurm.*

The Silverton, Gladstone & Northerly engine house in Silverton, Colorado in July 1939. Apparently two locomotives were in storage inside this shed. Note the drawbar draped across the right hand track as a sort of stopping post or derail. The photo is looking eastward from Silverton. *Photo by Ted Wurm.*

Silverton Northern box car #2006 as photographed in 1939. This car was built by the American Car & Foundry Company in 1899 and was formerly SG&N #1006. She was a faded red color. *Photo by Ted Wurm.*

The switcher at Durango, Colorado in1939. She was built by Baldwin in 1882 and was sold to the Montezuma Lumber Company in 1941. *Photo by Ted Wurm.*

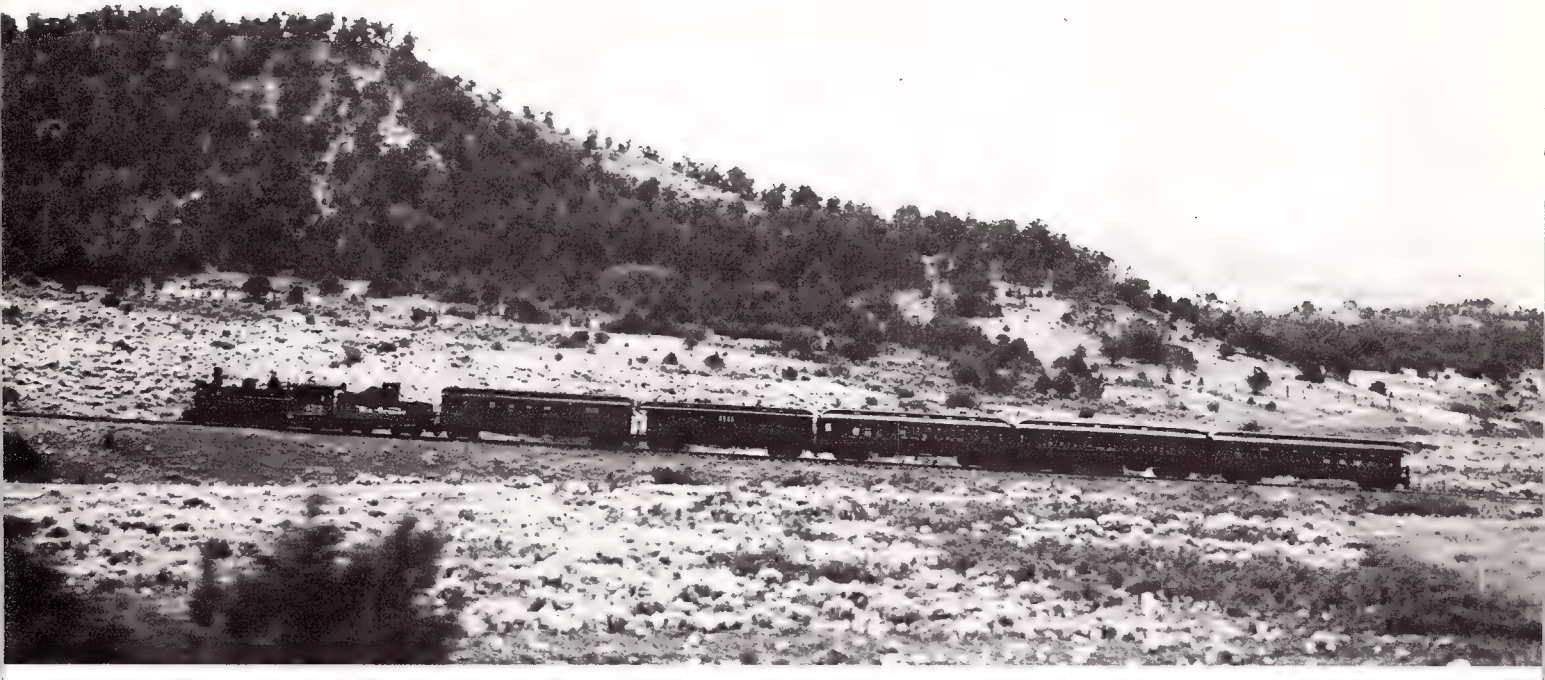
wherever the train stopped en route. Casually pretending to shoot pictures on the off side, I grabbed a boxcar as the train started away from the depot, climbed to the top and tried to make myself invisible. If the enginemen noticed, they paid no attention, and the trainmen were inside the coach trailing behind. While enjoying the spectacular scenery of Animas Canyon, I couldn't help but notice that there was no sign of the highway for mile after mile. We hadn't realized that road and railroad were widely separated here by the ruggedness of the mountain terrain. Poor Bob drove on and on, almost three-quarters of the way to Durango, when the highway suddenly crossed the tracks and he soon reached Hermosa station.

Meanwhile, our train had stopped once to couple onto two gondolas at a siding and these cars were shoved along unceremoniously in front of engine #475 as the train resumed its journey. I spotted our Chrysler as the engine whistled; then we slowed to a stop at Hermosa. When #475 uncoupled to set out the gons, I ran around the front and grabbed the car keys from Bob, then entered into a lively discussion with the brakeman while my partner stationed himself at the other side of the first boxcar, camera out in a businesslike manner.

The train passed the whistling post at the south end of town with Bob Gray decorating the top and T. Wurm taking a picture for posterity. I paced the train for its last ten miles into Durango at a steady 15 miles per hour, then headed for a meeting place at the station. Bob emerged from the freight yards and we congratulated ourselves on the big adventure. We briefly checked the D&RGW's large roundhouse across from the station. Finding no action there, we made a hasty survey of the town to get oriented. Rio Grande Southern's terminus was found a short distance to the west (this was described in an earlier chapter). Everything was quiet on this railroad as well, so we went back to inspect the Grande's enginehouse and the varied narrow-gauge power inside.

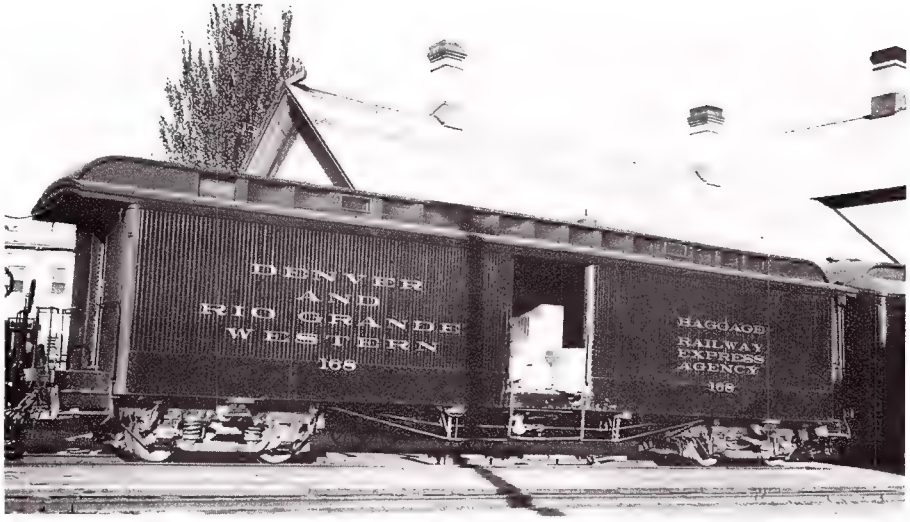
We introduced ourselves to another fan with his camera and found out his name was Beck and he lived in nearby Animas City. He informed us that the short electric carline that had connected Durango with Animas was long gone without a trace. He also advised us to get our tails out to the east of town right away if we wanted a picture of the famed "San Juan" passenger train arriving after its all-day run from Alamosa. Just before 6:00 p.m. we stood beside the road on an elevation looking down on the main line and, sure enough, there came Mike #477 with the pride of narrow-gauge varnish glistening in the warm afternoon sun. Behind the locomotive were five baggage and express cars, RPO car #119, a chair car, and parlor-observation "Alamosa".

The first three baggage cars, explained the local railfan, constituted the daily



The "San Juan" westbound for Durango eight to ten miles east of Farmington Junction in 1946. It is unusual to see such a clear photograph of a whole passenger train. *Photo by Bert Ward.*

The "San Juan" ready to depart in the morning at the Durango station in June 1939. *Photo by Doug Richter from the collection of Bert Ward.*




Just in from Alamosa on the "San Juan" in 1939. Notice the fresh green paint and the load in the door. *Photo by Ted Wurm.*

The "San Juan's" RPO car just in from Alamosa. The shiny green paint looked new. This car was built by the D&RGW in 1924. The photo was taken in 1939 by Ted Wurm.

The "Alamosa" at the tail end of the "San Juan" ready to leave Durango for Alamosa on July 20, 1939. *Photo by Ted Wurm.*

"Rocket Freight", an LCL service performed at the demand of local shippers. Back at the station, we took in the various unloadings of mail and express, baggage and LCL – a wonderfully busy scene that was heartwarming to railfans – then tried the luxurious sponge rubber seats of the coach. We photographed the train cars, a caboose, CONX tankcar #44, meanwhile getting even more kicks at the arrival of Rio Grande Southern "Goose" #4, which dropped off mail, express, and a few passengers, then disappeared westward across the bridge. That evening, while enjoying Durango's big summertime attraction, softball, we could hear the great sounds of steam locos switching in the nearby yards. It was a truly memorable day.

Durango was simply great: shiny, much-used tracks everywhere with really heavy-looking rail on the main line. Nothing looked out of proportion and, since there was no "standard" gauge to be seen for several days, we quickly adjusted to three-foot as the norm. It was easy to understand how an entire country's railroad system could be in a narrow gauge, without any loss of efficiency and with no inconvenience. Much in evidence during the two days we spent in and around Durango was the local switcher, D&RGW's Consolidation #271, 57-year-old Baldwin C-16. There couldn't have been a more attractive engine puttering around. Number 268 was standby.

After watching the "San Juan" depart for Alamosa early in the morning, we concentrated on photographing as many types of cars on the railroad as we could, particularly the many varieties of passenger-train cars. Here and elsewhere on the "Grande" we were amazed at the great numbers of such pieces of equipment that had been converted to maintenance of way service. Some were still painted green; others had been changed to red; most of the numbers had apparently not been changed at all. Open platforms, vestibules, clerestory roofs (we referred to those as "monitor-deck roofs" at the time)– there was enough variety at the various D&RGW terminals to please the most discriminating photographer or modeler.

On the second morning we reluctantly left Durango and headed eastward over the Continental Divide toward Alamosa, a renowned junction point in narrow-gauge history. We drove through Pagosa Springs with nothing to show us that this had once been a busy meeting place of D&RG and logging rail lines. We followed the standard-gauge Creede Branch, snapping a green caboose of San Luis Central at Monte Vista. Then we made our way to Alamosa where the slim gauge met the standard and we expected to find an abundance of photo subjects, what with the three footers coming in from north, south, and west and the "broad gauge" in over La Veta Pass from Denver.

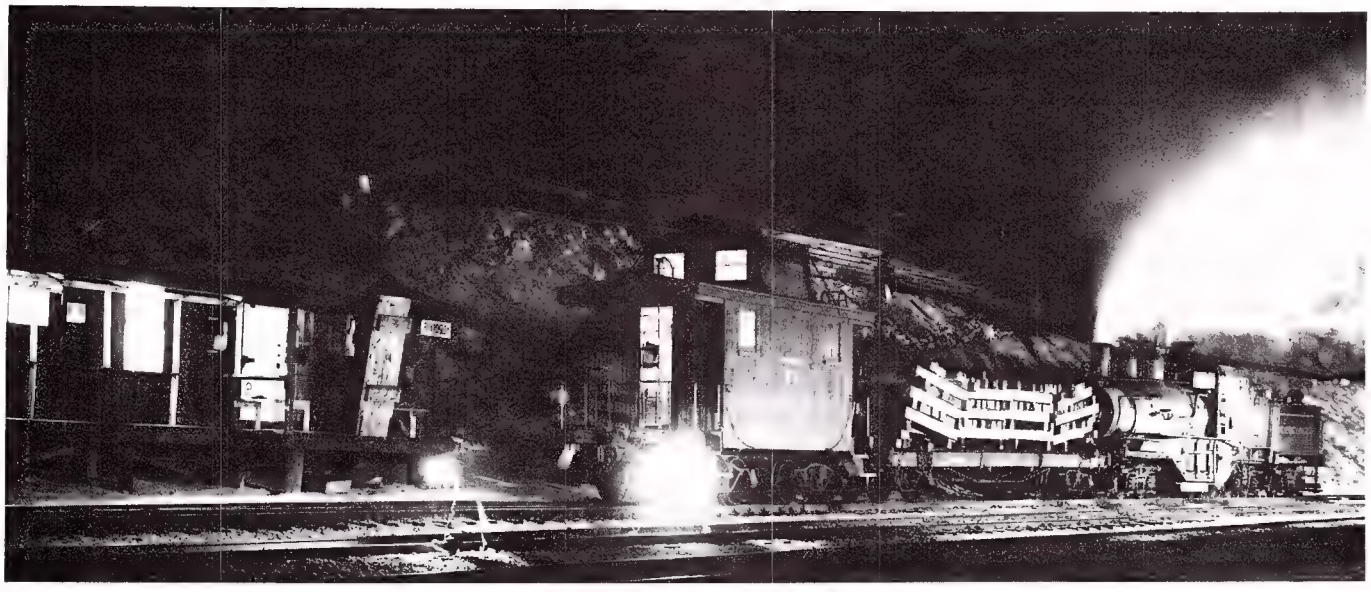
# GAZETTE GALLERY

**Edited by Gene Deimling**

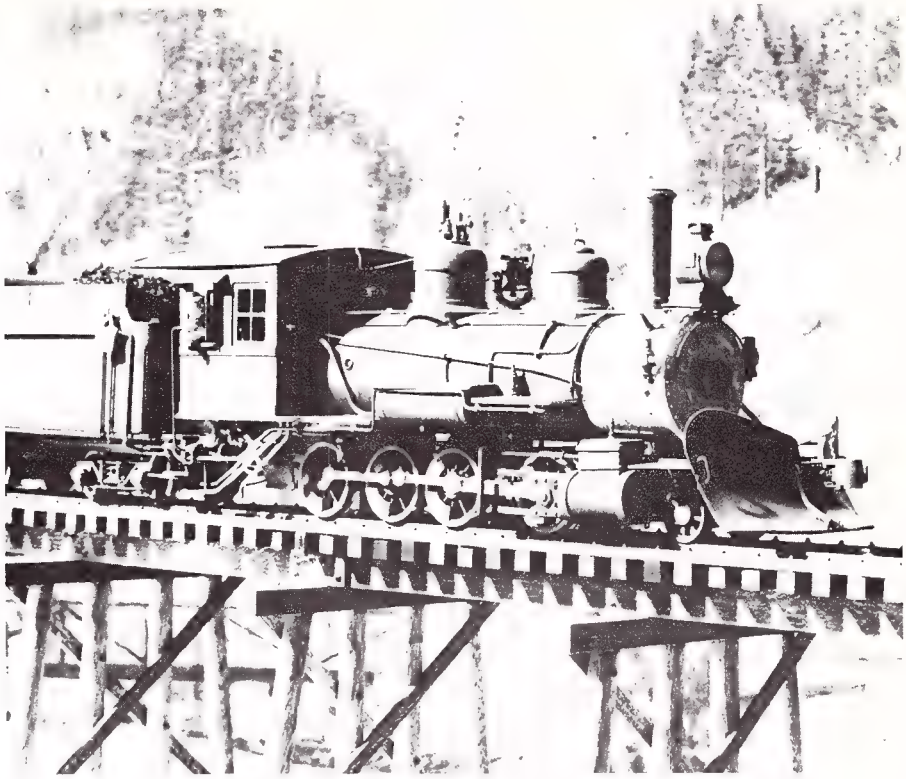
The Pickering Lumber Corporation operated an impressive railway operation out of Standard, California. Pickering's log trains traversed some of the most beautiful scenery in the Sierra's. In this view, a Shay-powered train has just cleared a rock formation known as the "Peeled Onion" which is located just below Beardsley Dam. *Photo by Gerald French from the collection of A. Jeske.*

Back up the canyon of the Middle Fork of the Stanislaus River a Pickering log train has just arrived at Beardsley Dam. Caboose #5 is hardly longer than the pair of trucks that support it. *Photo by Gerald French from the collection of A. Jeske.*

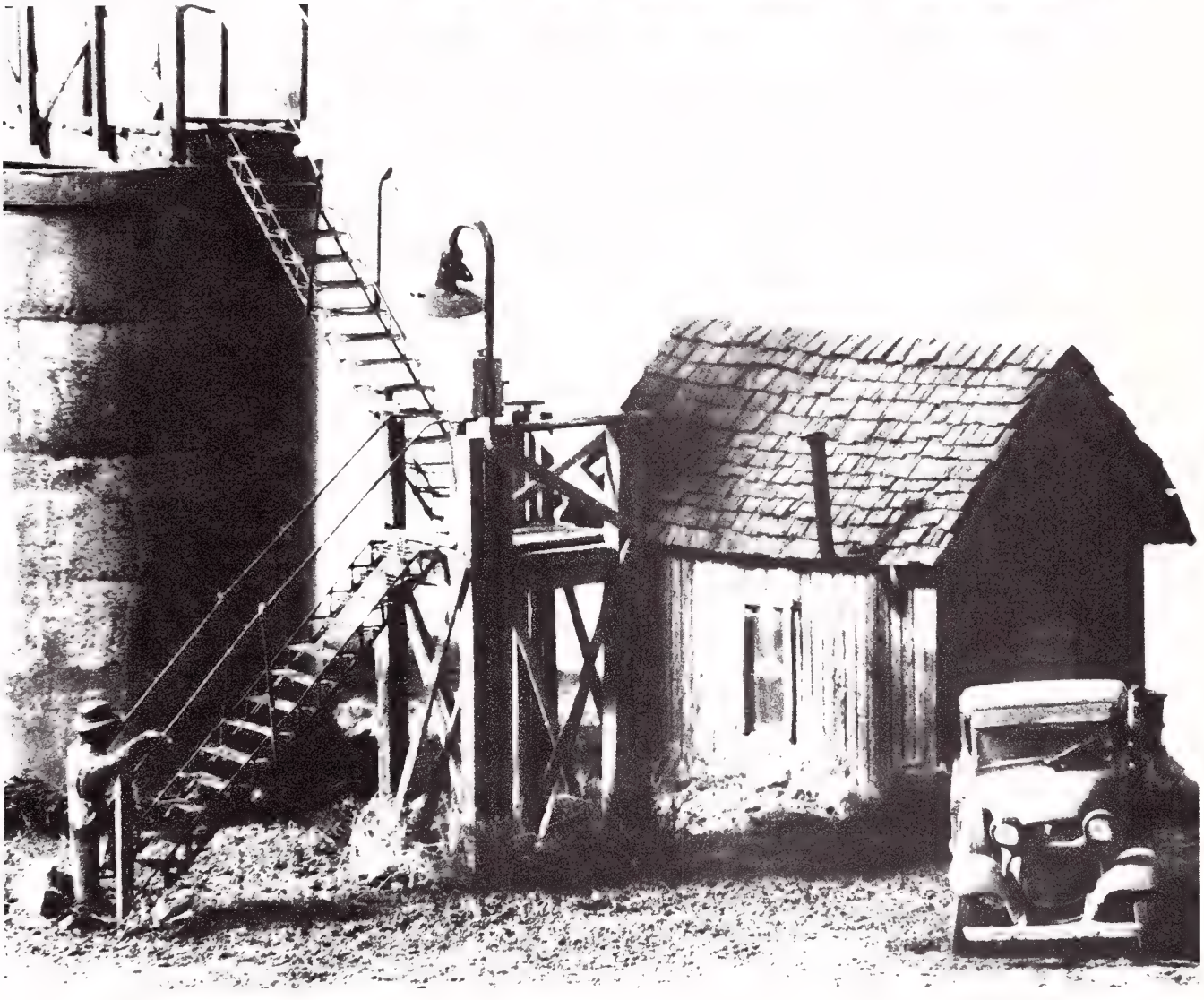
Night time at Beardsley finds caboose #05 and a flat loaded with new ties in the capable charge of one of Pickering's Pacific Coast Shays. *Photo by Gerald French from the collection of A. Jeske.*



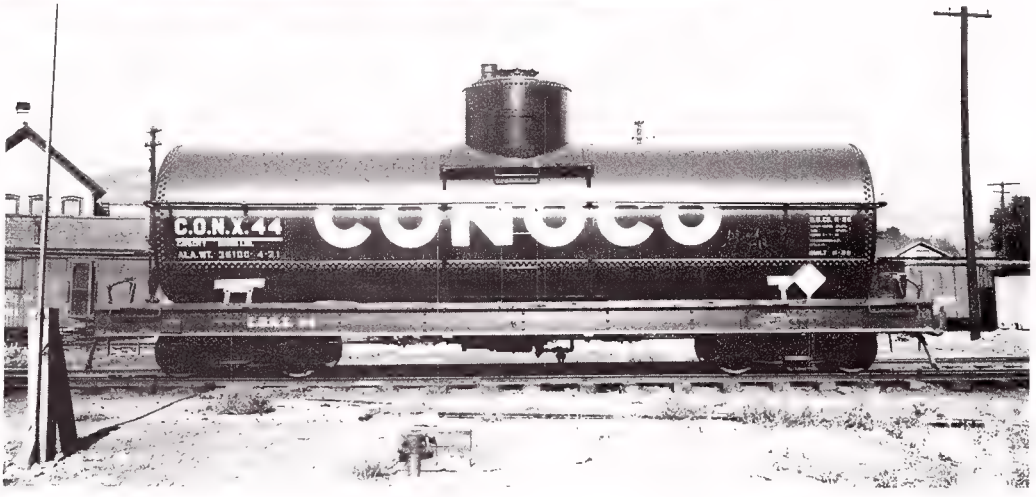
David Rogers modified his Balboa On3 C-19 with a snowplow, headlight and spoked pilot wheel. The net result is an attractive freelanced locomotive with that familiar "Colorado" look. The model was photographed on a scratchbuilt trestle. *Photo by David R. Rogers.*



Al Stohl combined an SS Ltd. oil tank kit with a scratch built office to create this interesting HO scale scene. The office features a full interior, cedar shingles and working lights. The truck is a Wheelworks kit. *Photo by Buzz Russo.*



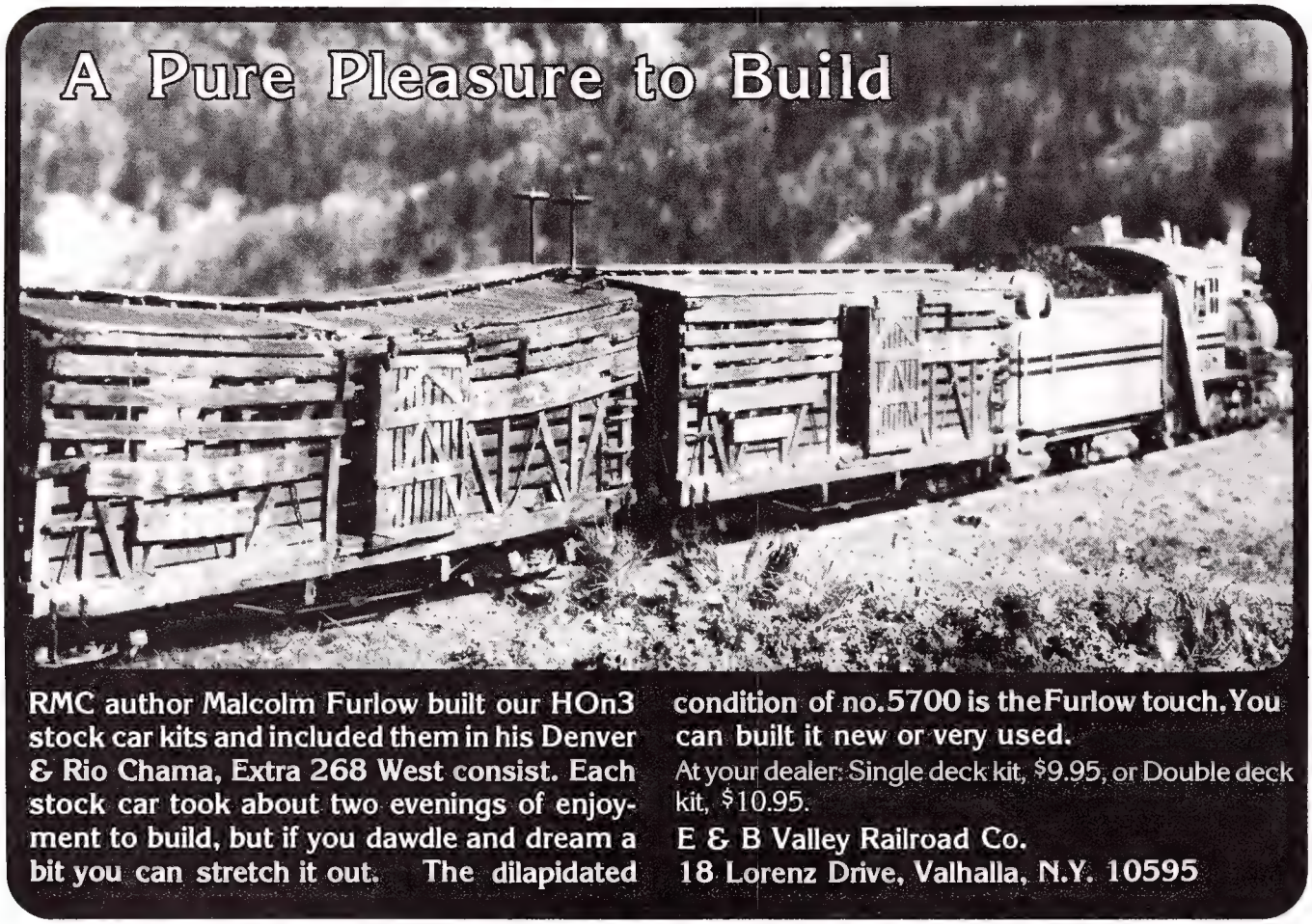
Chuck Yungkurth was down visiting the folks at **RAILROAD MODEL CRAFTSMAN** and happened to find this old stone store a few miles away in Marksboro, New Jersey. This should be a real challenge to all you stone carvers out there. *Photo by Chuck Yungkurth.*




This beautifully clear side view of C.O.N.X. #44 was taken in Durango, Colorado in 1939 by Ted Wurm. The car was black with white letters.

The E&B double deck sheep car in person. This clear photo was taken in Durango in 1939. The car is painted black. *Photo by Ted Wurm.*

The Virginia & Truckee's Carson City, Nevada enginehouse is a massive structure. Look at the length of the apron. The equipment is spotted for an excursion on June 5, 1938. Locomotive #26 is on the left and #25 appears between the two motor cars. Motor cars #23 and 99 were both painted yellow and had been out of service for some time when this photo was taken. *Photo by Ted Wurm.*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# Book Reviews

**N&W: Giant of Steam** by Major Lewis Ingles Jefferies, Pruett Publishing Co., 1980, Boulder, Colorado. Hardbound, illustrated, 333 pages, $35.00.

Pruett Publishing Co., 3235 Prairie Ave., Boulder, CO 80301 has another of their excellent books on large main line railroads available. This book covers the Norfolk and Western. It sells for $35.00. The book has a section of the history of the line and then three parts describing the railroad's motive power. There are many photos of locomotives including steam, electric and diesel. An appendix with locomotive statistical data is provided. While not particularly for the short line or narrow gauge enthusiast this book should be of interest to any steam locomotive lover. *Bob Brown.*

**Virginia & Truckee Locomotives** by Karl R. Koenig, Chatham Publishing Co., 1980, P.O. Box 283, Burlingame, California 94010. Softbound, illustrated, 87 pages, $14.00.

The Virginia & Truckee was indeed a fabled railroad. It was built during a period of opulence and so the equipment was first rate. The line maintained this beautiful equipment right up to the end so it was possible to see resplendent coaches and vintage 4-4-0's in the twilight years of this legendary railroad's existence. Karl Koenig has come up with an excellent book which is divided into three main parts. The first is an overall history of the road. This section is about 20 pages long and has many vintage views of the line. The second section is a description of the restoration of the V&T from the now filled in tunnel 6 downhill to tunnel 4. There are photos of trains in steam with several steam locomotives. The third part of this book is a locomotive by locomotive description of each engine. They are listed in numerical order. The builder, date, serial number, and vital dimensions are listed as is a history of each locomotive. A clear photo is also provided. In most cases several photos are provided and in the case of boomer engines the locomotives are shown in their various guises. The preserved engines are also shown in their final form. There is also a section on locomotive names, a graph showing when each locomotive was in operation, a section on engine data and a bibliography/index. There are two maps of the line at the back of the book. *Bob Brown.*

**Plan Set, Clyde Track Laying and Lifting Machine** by Bill Roy, P.O. Box 3695, Eugene, Oregon 97403.

Bill Roy has drawn a beautiful set of drawings and information for the Clyde Track Laying and Lifting Machine. These units consisted of a flat car with a central tower and a large bridge-like boom which projected from both ends of the tower. They were used to lay and remove track on many logging railroads. The plans consist of four sheets showing side, top, detail, and isometric views of this machine. Sketches of the winch assembly are also provided. The plans come in HO and O scale. The HO set comes with several pages of information and sketches on building one of these creatures in HO scale. Both sets of plans come with a short description of the Clyde track layer and a list of railroads which used them. The HO plan set sells for $6.00 and the O scale set is $7.00. There is a 19 page xeroxed booklet for $3.00 which discusses operational details. These are excellent plans and seem to be especially drawn with the modeler in mind. They have the necessary data to build a prize winning model. *Bob Brown.*

**Fares, Please! Those Portland Trolley Years** by John T. Labbe, The Caxton Printers, Ltd., 1980, Caldwell, Idaho 83605. Softbound, 164 pages, $12.95.

Most of you are familiar with the name John Labbe because of his logging books. John has departed from the timber theme in his latest book. Actually it is not too far a departure because it is hard to separate any Oregon based railroad activity from the lumber industry. *Fares, Please!* is a detailed look at the street railways of Portland, Oregon. It starts with the early horsecar lines. Five steam tram lines are also described. Many of the steam dummies used on these street lines found work to do in the woods after the street railways electrified. There are three cable car lines described and then eight chapters on the electric street cars and their surroundings. Many modeling possibilities are shown. Many of the systems discussed have maps and there is a fold-out map of Portland in the front of the book. While this is really a traction book many of the lines were narrow gauge and the vintage scenes are well worth the price of the book. *Bob Brown.*

**The Midland Route: A Colorado Midland Guide and Data Book** by Edward M. "Mel" McFarland, Pruett Publishing Co., 1980, Boulder, Colorado. Hardcover, illustrated, 350 pages, $44.95.

The Colorado Midland has been rightfully the subject of some excellent books, most notably Morris Cafky's long out-of-print tome published by the Rocky Mountain Railroad Club. Since the going price for that one (if you can find it) is steep, CM fans should welcome this new work.

McFarland's book is lavishly illustrated with some new (not previously published) photos, maps, track diagrams and paper forms. A pocket contains a system map, and employee and passenger timetable reproduction. The text is readable and easy to follow. Considering that the railroad folded in 1922, there is an amazing amount of material here.

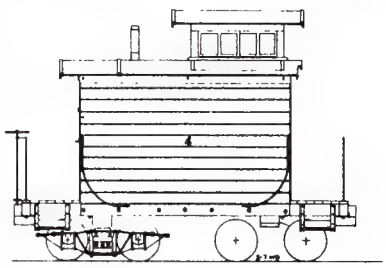
What sets this book apart are the two pictorial "railfan trips" over the road, in 1908 and 1980. The first, through pictures and text, covers the road from its terminus at Colorado City through to Glenwood Springs, over Hagerman Pass. The 1980 trip retraces the railroad's route, illustrating the relics which can still be seen. Interesting and helpful in case you'd like to do the same.

Given the wealth of information and the high technical quality of this book, the price should not be a factor to any CM fan. I recommend it. *Charlie Getz.*

**How To Build Dioramas** by Sheperd Pain, Kalmbach Publishing Co., 1980, Milwaukee, Wisconsin. Softcover, 104 pages, $8.95.

This is a *must* book for the advanced modeler. Paine, a top-notch modeler, clearly explains how to create effective dioramas and provides valuable modeling tips. In many ways, our friends in the military miniatures field are ahead of us in techniques. I learned a lot from this book. Though not a single railroad model is shown, almost all of its very helpful techniques are applicable, such as figure painting, weathering, lighting, and placement of components in a diorama.

Besides discussing general techiques, Paine also describes the step-by-step construction of specific dioramas. Much of his work is inspiring, and I enjoyed this book. *Charlie Getz.*



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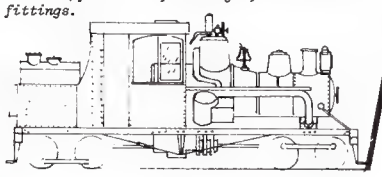

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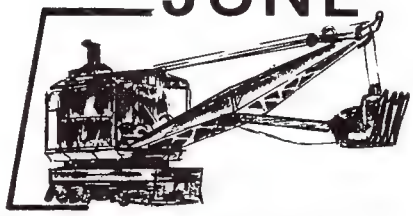

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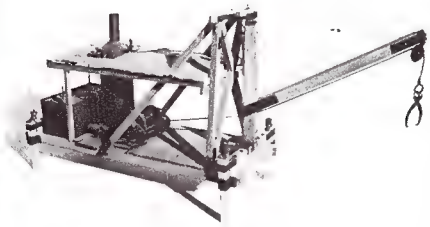

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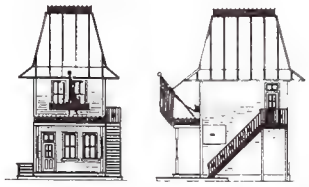

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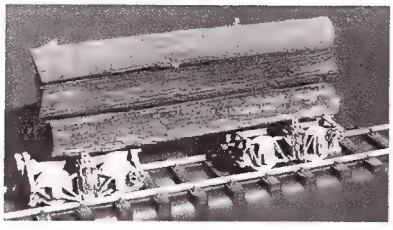

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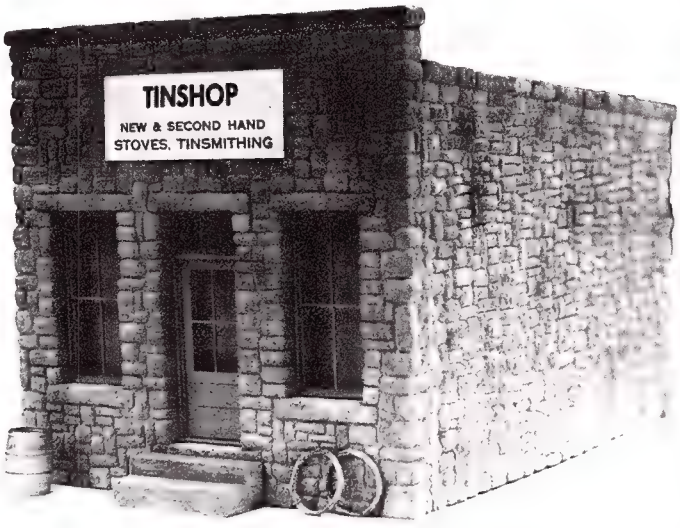


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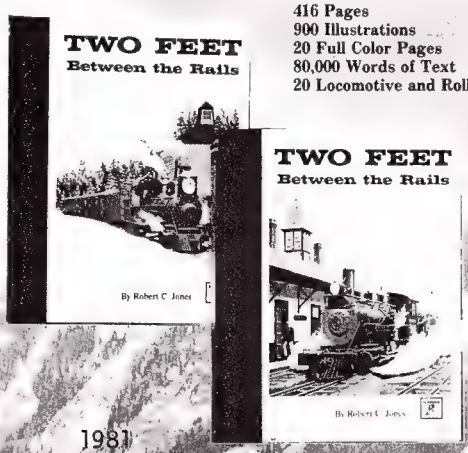

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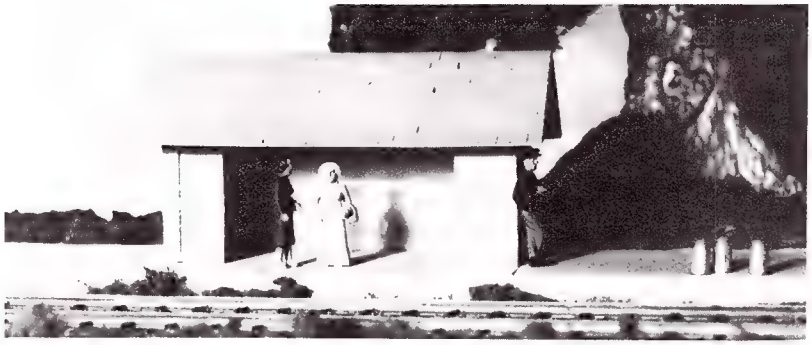

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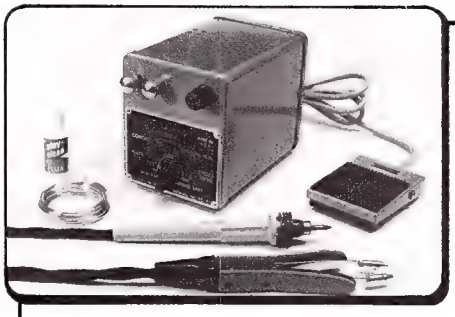

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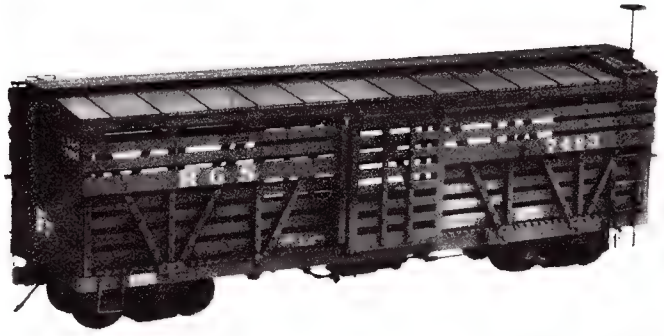

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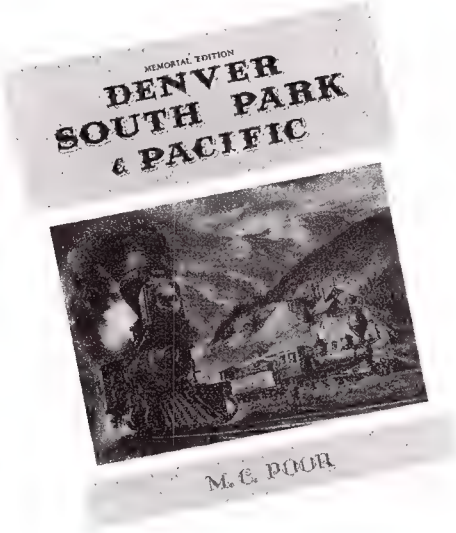


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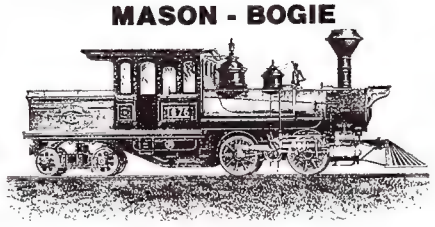

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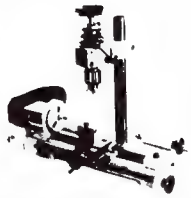

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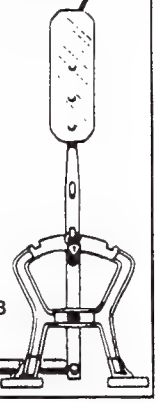

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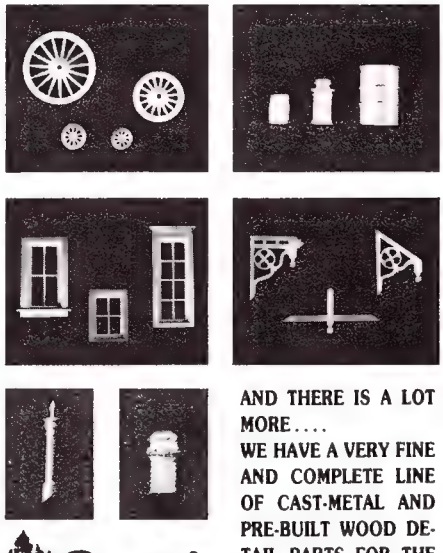



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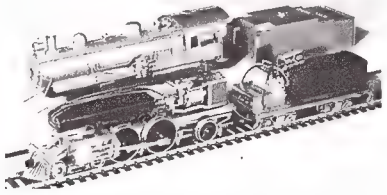

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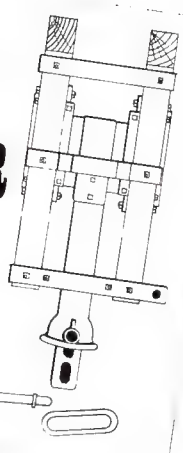

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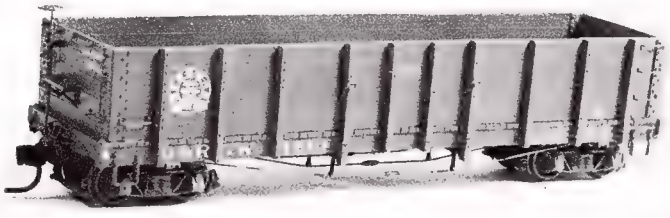

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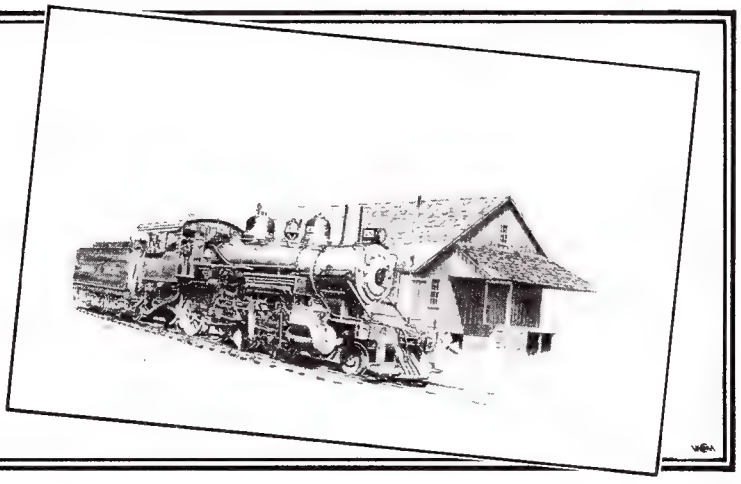

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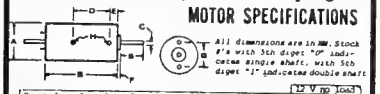

All dimensions are in MM. Stock #'s with 5th digit "0" indicates single shaft, with 5th digit "1" indicates double shaft

| Stock # | A | B | C | D | E | F | G | H | S | 12 V no load rpm | amps |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 12200-9 | 12 | 20.0 | 1.5 | 11.5 | 2 | 1.0 | 8 | 1.4 | 9 | 24500 | 0.18 |
| 12201-9 | 12 | 20.0 | 1.5 | 11.5 | 2 | 1.0 | 8 | 1.4 | 9 | 24500 | 0.18 |
| 12250-9 | 12 | 25.0 | 1.5 | 16.5 | 2 | 1.0 | 8 | 1.4 | 15 | 16200 | 0.08 |
| 12251-9 | 12 | 25.0 | 1.5 | 16.5 | 2 | 1.0 | 8 | 1.4 | 15 | 16200 | 0.08 |
| 14200-9 | 14 | 20.0 | 1.5 | 11.5 | 2 | 1.0 | 10 | 1.4 | 5 | 28000 | 0.17 |
| 14201-9 | 14 | 20.0 | 1.5 | 11.5 | 2 | 1.0 | 10 | 1.4 | 5 | 28000 | 0.17 |
| 14250-9 | 14 | 25.0 | 1.5 | 16.5 | 2 | 1.0 | 10 | 1.4 | 15 | 18000 | 0.10 |
| 14251-9 | 14 | 25.0 | 1.5 | 16.5 | 2 | 1.0 | 10 | 1.4 | 15 | 18000 | 0.10 |
| 16201-9 | 16 | 20.0 | 2.0 | 13.0 | 1.5 | 1.9 | 12 | 2.0 | 15 | 15200 | 0.21 |
| 16300-9 | 16 | 29.5 | 2.0 | 19.0 | 3 | 0.5 | 12 | 2.0 | 15 | 11000 | 0.07 |
| 16301-9 | 16 | 29.5 | 2.0 | 19.0 | 3 | 0.5 | 12 | 2.0 | 15 | 11000 | 0.07 |
| 20271-9 | 20 | 26.5 | 2.4 | 13.0 | 4 | 1.0 | 13 | 2.0 | 15 | 12800 | 0.11 |
| 20320-9 | 20 | 31.5 | 2.4 | 19.0 | 4 | 1.0 | 13 | 2.0 | 15 | 10750 | 0.085 |
| 20321-9 | 20 | 31.5 | 2.4 | 19.0 | 4 | 1.0 | 13 | 2.0 | 15 | 10750 | 0.085 |
| 22241-9 | 22 | 24.0 | 2.4 | 15.0 | 2 | 1.5 | 14 | 2.0 | 15 | 17000 | 0.16 |
| 22311-9 | 22 | 31.0 | 2.4 | 20.0 | 2 | 1.5 | 14 | 2.0 | 15 | 11000 | 0.11 |
| 22361-9 | 22 | 36.0 | 2.4 | 26.0 | 2 | 1.5 | 14 | 2.0 | 15 | 9800 | 0.075 |
| 22401-9 | 22 | 40.0 | 2.4 | 27.0 | 2 | 2.0 | 15 | 2.0 | 15 | 9500 | 0.075 |
| 28241-9 | 28 | 24.0 | 2.4 | 11.0 | 5 | 2.0 | 15 | 2.0 | 15 | 9800 | 0.13 |
| 28301-9 | 28 | 30.0 | 2.4 | 16.0 | 5 | 2.0 | 15 | 2.0 | 15 | 8200 | 0.09 |
| 28351-9 | 28 | 35.0 | 2.4 | 21.0 | 5 | 2.0 | 15 | 2.0 | 15 | 7000 | 0.10 |
| 32531-9 | 32 | 53.0 | 3.2 | 24.0 | 12 | 1.0 | 22 | 3.0 | 12 | 6300 | 0.12 |
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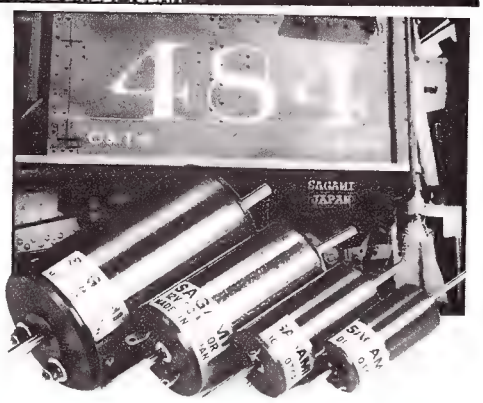

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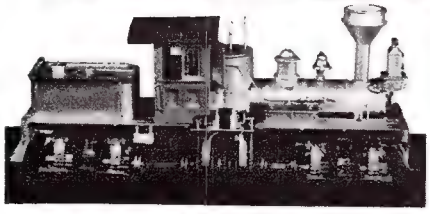

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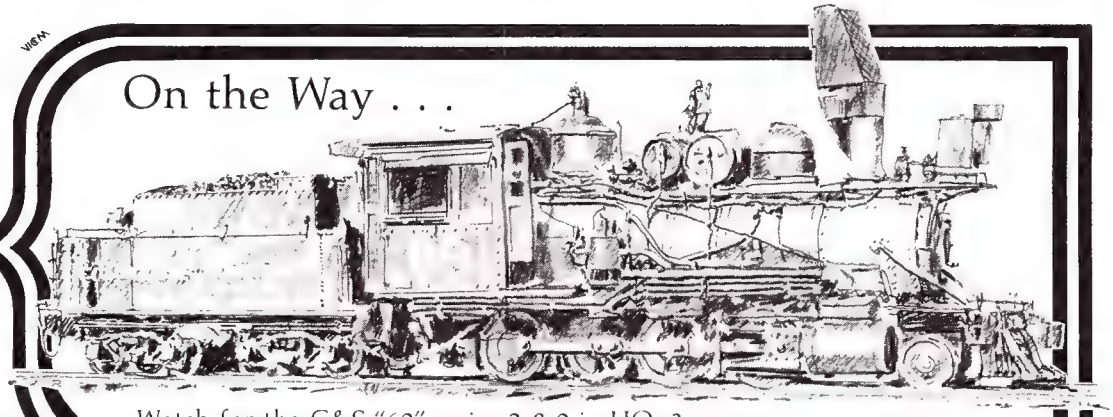

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PC Board Sound Sync Units as reviewed in the Sept/Oct '80 **GAZETTE**. Madruga Model Works, P.O. Box 1143, Milpitas, CA 95035.

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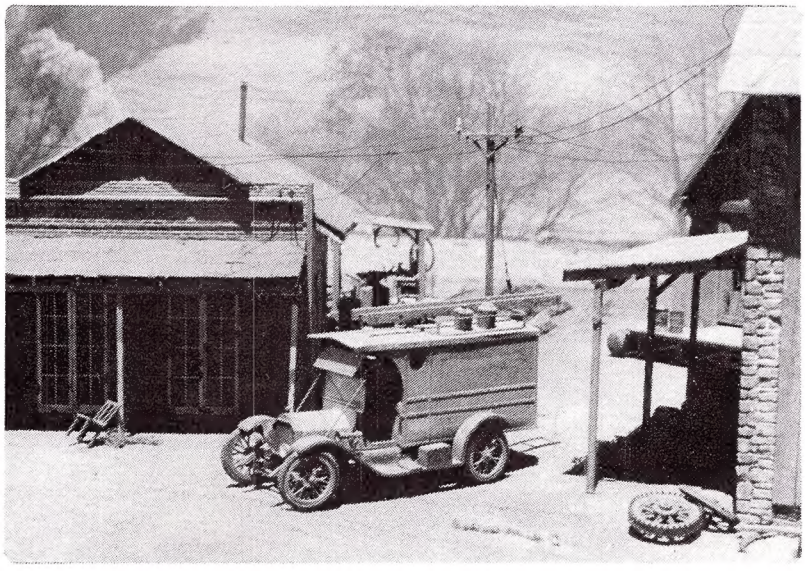

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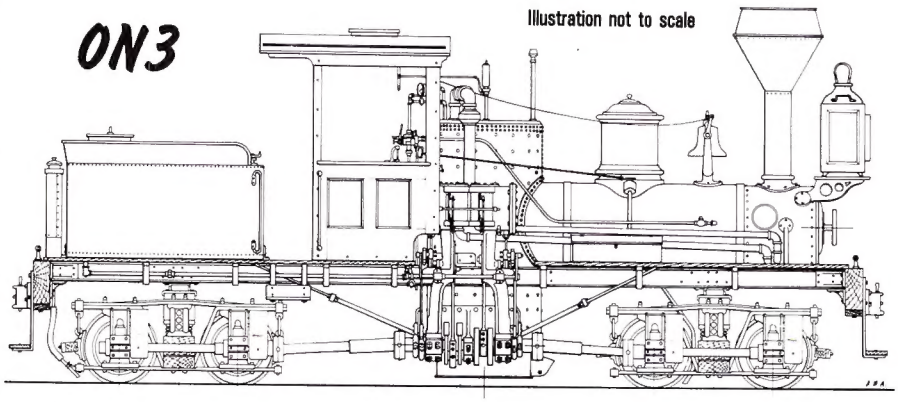

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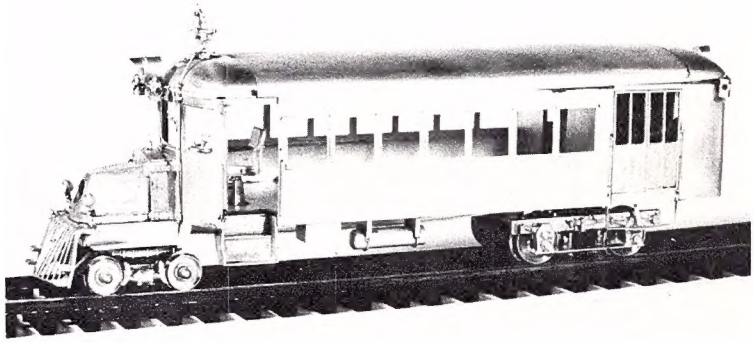

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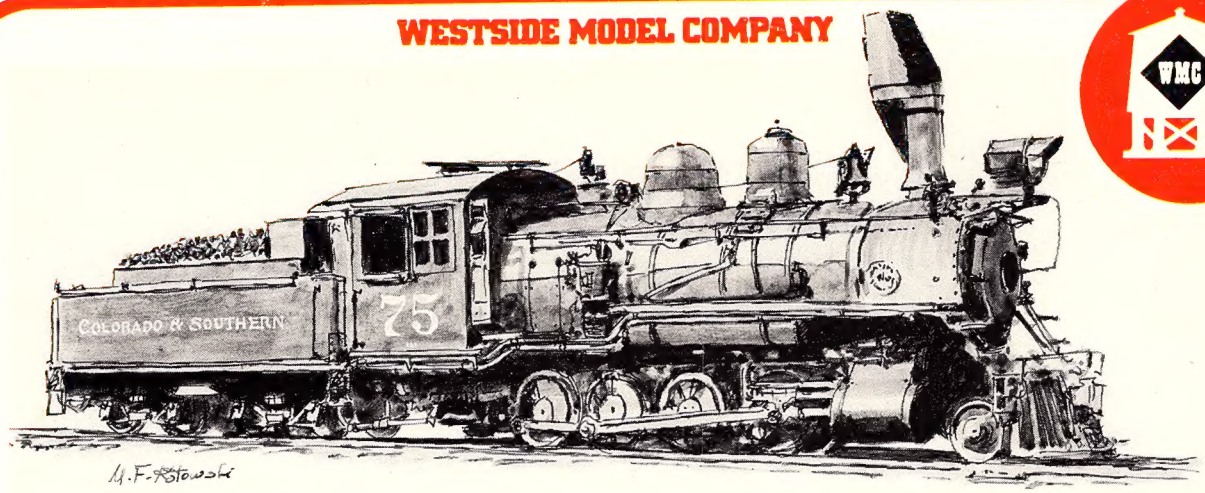


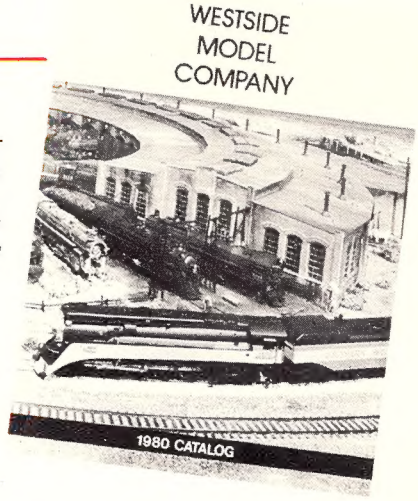

**COLORADO AND SOUTHERN**

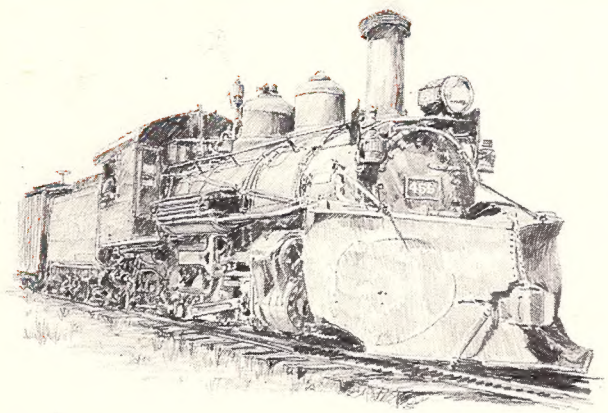
The **Colorado & Southern 75** had been around for a long time in its prototype form... Never having been modeled commercially before, the Westside Model Company took this opportunity to complete a project started back in 1964. At that time Westside produced the C&S "76" of which 25 were imported. That engine has thus far not been reproduced. Westside also produced the C&S "74" a few years back which left a gap between the numbers. Now your local Westside dealers have the missing link...**the C&S number 75 is in stock.** This HOn3 collection is now complete. Too bad there weren't more of the "76's" around!

The desire to be knowledgeable has cornered all of us model railroaders and the **Westside G-Files provide a wealth of knowledge** that other importers have tried to copy but just could not or would not place before the modeling public. . .cost too much! Westside presently has its first 120 models fully documented in loose leaf form. Now then, who wants information on a bunch of models that were built years ago? Remember what modeling is all about; and that is assembling and collecting items of the past in miniature. In this case it is locomotives and rolling stock of various scales. **The Westside G-Files** have as much if not more history on the prototype locomotives and cars as they have on the models. A factual history of both ends of a modeling project that is available in two volumes: **VOLUME I** is priced at **$47.00 — VOLUME II** is priced at **$50.00.** Should you choose to buy both volumes there is a $7.00 savings

**"G"-FILE VOLS. I & II $ 90.00**

Still available in dwindling numbers **the 3rd Westside catalog** is at your Westside dealers for **$3.50.** Here is an interesting collection of prototype photographs by Charles T. Felstead, Harold K. Vollrath and Charles Givens; model photos by the great Paul Jansen and Ron Salwasser with illustrations by M.F. Kotowski; locomotive performance reports and custom painted models by Davis, Givens and Lucas...all this in black and white and it looks great.



For the Rio Grande Southern fan "et al," Westside brings forth the **"455"** with its **steel cab.** Westside's models of the K-27 need no introduction to the narrow gauge fraternity as all versions/eras have thus been modeled by Westside. The "455" was the last of the breed...a most interesting steam engine.

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